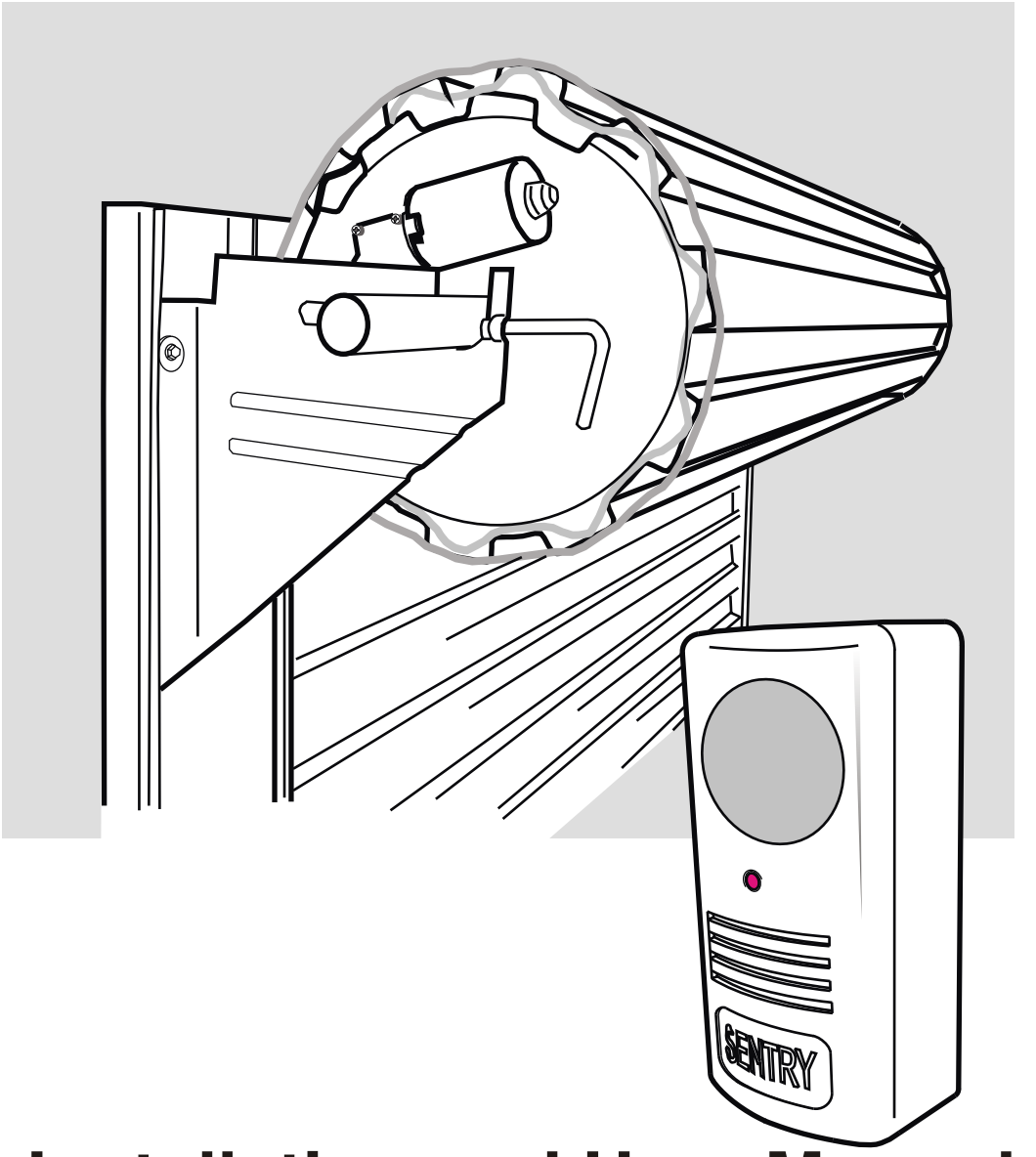
SENTRY

DCC02 Roll-up Garage Door Automation



Installation and User Manual

ENG **Manufactured By Martin Electronics cc**
PO BOX 49284, ROSETTENVILE 2130
Republic of South Africa

AFR **Vervaardig Deur Martin Electronics cc**
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DEU **Hergestellt durch Martin Electronics cc**
PO-Kasten 49284, ROSETTENVILE 2130
Republik Südafrika

POWERED BY

freescale™
semiconductor

Technical Support

For technical queries relating to use/installation of this product!

+27 11 433 4084

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ENGLISH

Company Profile

ENGLISH

Martin Electronics is a respected and well-known manufacturer of RF remote controls and security products and has established itself as the leader in RF remote control for the past 20 years.

The company manufactures remote controls, receivers, infrared beams and garage door automation products under the Sentry brand name.

The company also manufactures products for OEM (Original Equipment Manufacturers) and custom markets and is deeply respected in this regard as it designs and manufactures not only its own products but specialised and custom products for specific customers and provides support for these products.

MARTIN ELECTRONICS strives to give service and backup second to none. Technical staff, as well as our engineers are available to give answers to technical or installation problems.

The equipment is installed countrywide and is available through a network of distributors in South Africa.

Further information is available on our website
www.martin-electronics.co.za

WARNINGS AND CAUTIONS

PLEASE READ THE FOLLOWING WARNINGS AND CAUTIONS BEFORE INSTALLING OR USING THE PRODUCT.
RISK OF ELECTRIC SHOCK AND/OR FIRE
DO NOT TOUCH ANY COMPONENTS WHEN POWER IS APPLIED

1. **Read all instructions and warnings carefully before installing the product**
2. The product must only be installed by suitably qualified persons.
3. **NEVER** allow children to play with the door or its remote controls and keep children and pets away from the door, especially when it is being used.
4. Secure all remote controls and opening devices to prevent unauthorized access to the door.
5. **Before attempting any work or maintenance on the product, disconnect the power and remove the batteries (if applicable)**
6. All modifications not expressly approved by the manufacturer are forbidden.
7. Do not install the product in an explosive atmosphere or in any location subject to heavy moisture ingress.
8. Safety devices i.e. IR beam, must be fitted to prevent death or injury by crushing due to persons or pets being in the path of the door curtain.
9. Always keep objects, pets, and people away from the path of a moving door.
10. Never short circuit any wiring to and from this equipment
11. The installer has a responsibility to explain to the owner/user how the system operates and how to deal with potential emergencies that may arise during the scope and course of the product's application. The installer must also pass on these instructions to the owner/user
12. The product is designed and manufactured only for the applications intended in this manual. Any other use renders the warranty null and void and neither the manufacturer or its distributors, affiliates, servants, etc. shall be held liable for any loss or damages whatsoever.
13. This product employs double insulation, and therefore does not require an earth conductor.
14. Always ensure the manual override cord is easily accessible at all times.
15. Never short circuit the wiring between the wall console and the motorised head unit, of this product.

Technical Support

For technical queries relating to use/installation of this product!

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NOTICE REGARDING BATTERIES

This product contains lead-acid batteries, which may not be disposed of by way of regular household refuse. Please consult with your local authorities as to the safe procedure of disposal when the batteries are replaced or product disposed of.

DO NOT DISASSEMBLE BATTERIES! CORROSIVE SULPHURIC ACID!

Introduction

ENGLISH

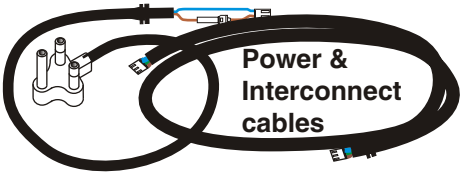
The SENTRY DCC02 is a second-generation roll-up door automation product designed for domestic and light industrial applications.

The product is designed to fit most roll-up garage doors that have plastic or metal spool wheels. It operates by applying a rotational force to one of these spool wheels which then in turn opens, or closes the door curtain as desired.

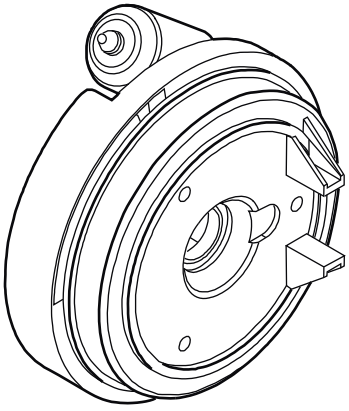
The DCC02 system consists of two parts, one of which is the motorised portion, that drives the door, and fits inside the door curtain roll. This is known as the “head unit”. This part is controlled, electronically, from the wall console. The wall console contains the power source, and the remote control receiver and includes a courtesy light and a control button on the front cover. To keep wiring to a minimum, only a total of three wires are used between the units. This is made possible using a digital one-wire bus.

The system provides limited battery back-up for mains failure situations. Alerts are provided for both mains failure and low battery conditions. The system integrates a learning remote control receiver which is compatible with SENTRY code hopping remote control transmitters. A maximum of 8 remote controls may be learnt into the system in total.

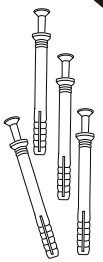
Package Contents



Power & Interconnect cables



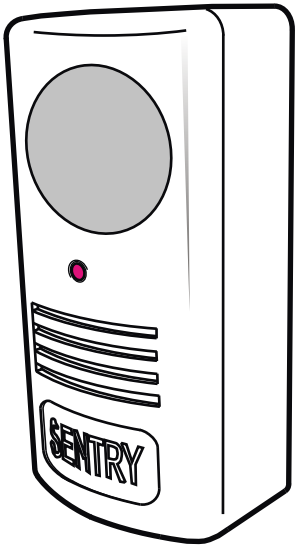
Motorised Head Unit



Masonry anchors (4 pcs 6x60)

Code Hopping Remote Control (2 pcs)

U-bolt mounting kit



Wall Console

Door Types and Considerations

IMPORTANT - PLEASE READ THIS SECTION CAREFULLY TO ENSURE THAT THE DOOR YOU INTEND TO AUTOMATE, MEETS THE REQUIREMENTS FOR SUCCESSFUL AND TROUBLE-FREE OPERATION!

Door Brands
This product is designed to operate, primarily with common types of roll-up door makes and models found in the South African market. These include the WISPECO™ brand and the KRAZI-DOOR brand. Other types are suitable, provided they meet the criteria listed below.

Door Type
In general, the DCC02 is designed to operate the standard low-cost roll-up doors commonly used in domestic applications- doors which are fabricated from thin laminated steel or aluminium. It is not recommended for use with the 1970's era heavy steel roll-up type doors, which are much heavier than the common roll-up door types.

Door Sizing
The DCC02 is designed to drive a single door by itself. For particularly wide doors, the product must be installed in the centre of the door, by fitting an additional adapter wheel. It is not possible to fit two motor head units to a single door. The height of the door is not a factor, therefore, standard height doors as well as "caravan doors" are suitable candidates for this product.

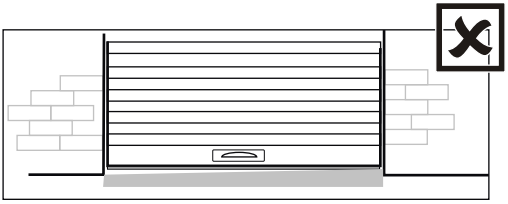
Door Condition
The condition, and quality of the installation of the door plays a MAJOR role in whether the installation of this product (or any other garage door automation product) will be successful or not. Common problems that cause this product to fail, either immediately, or after some time include:

Doors that are not true- These are doors that are installed skew, leading to the formation of gaps at the bottom when the door is fully closed. The DCC02 does close the door completely to the floor but it was **not** designed to drive the door curtain into the floor to seal against flooding etc...
Doors that are not balanced- These are doors that, although they appear to be light to move by hand, either suffer from tight spots during travel, or get stiff in cold weather. The DCC02 can compensate to a large degree, for cold stiffness but beyond this, will consistently go into over-current to protect the motor.
Doors that are too light- A frequent problem is a door that is too light, causing the door to unravel at the top, when closing. In these cases, it is necessary to add weight to the bottom of the door, in the form of a steel bar or angle iron. Doors that are too light also cause the system to exhibit various symptoms. These symptoms include moving short distances, stopping shortly after opening, etc..

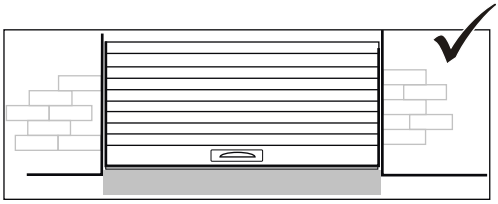
Door Types and Considerations

Doors with bent take-up spools- These are doors with bent spools, that pull the head unit's driving wheel proportionately skew. The product suffers damage and exhibits all kinds of fault conditions, most commonly that of moving short distances.

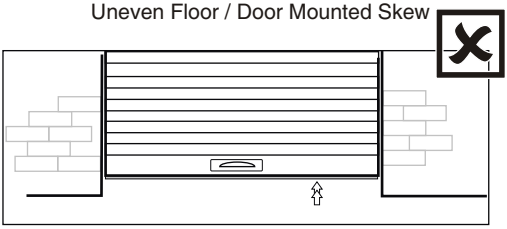
Door Condition Checklist



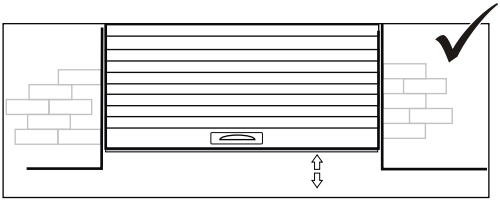
Uneven Floor / Door Mounted Skew



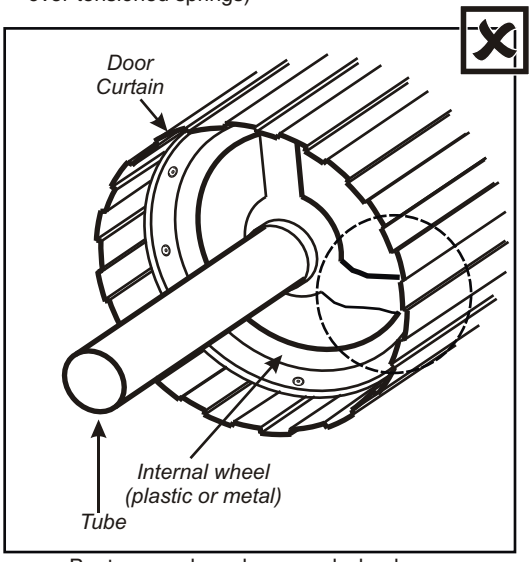
Door lands flat on floor and doesn't recoil



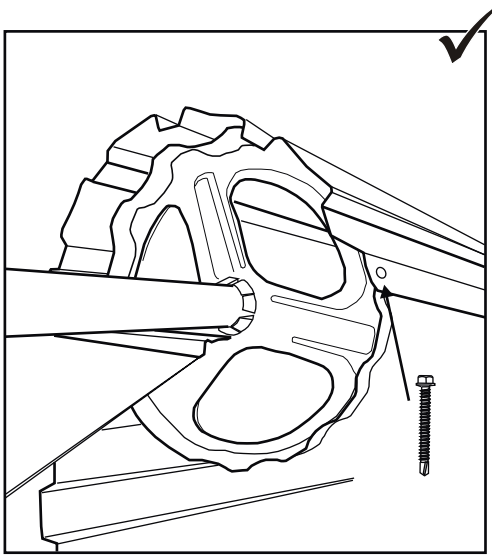
Unbalanced door (tends to open by itself due to over-tensioned springs)



Door equally easy to lift, or to pull down



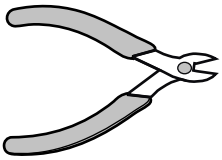
Bent, warped, or skew spool wheels
This causes damage to the product and is very common on badly installed doors and/or very cheap doors!!



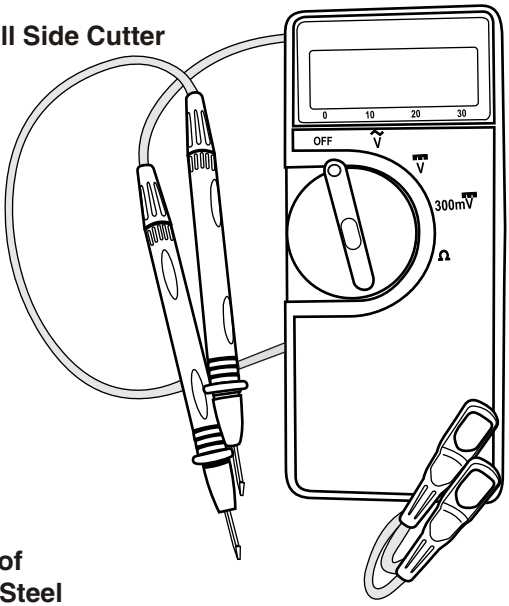
The start of the door curtain must be affixed at the end, to the door spools using a tek screw. This helps prevent problems and also secures the door better against intrusion

Required Equipment for Installation

Philips screwdriver & Flat screwdriver

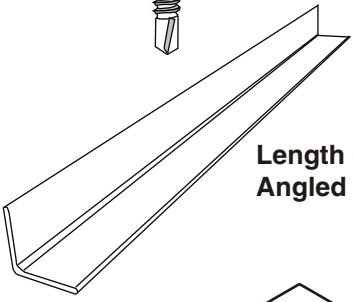


Small Side Cutter

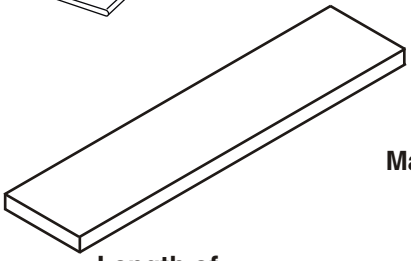


Multimeter

Tek Screws



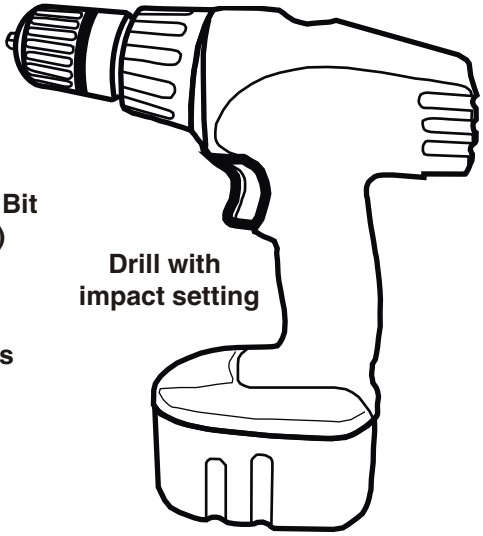
Length of
Angled Steel



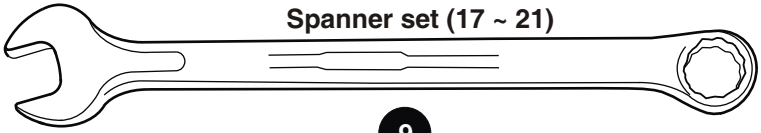
Length of
Rectangular steel bar
(To fabricate a base-
plate for KRAZI DOORS)

Masonry Drill Bit
(6 ~ 6.5mm)

HSS Drill Bits
(6 ~ 10mm)

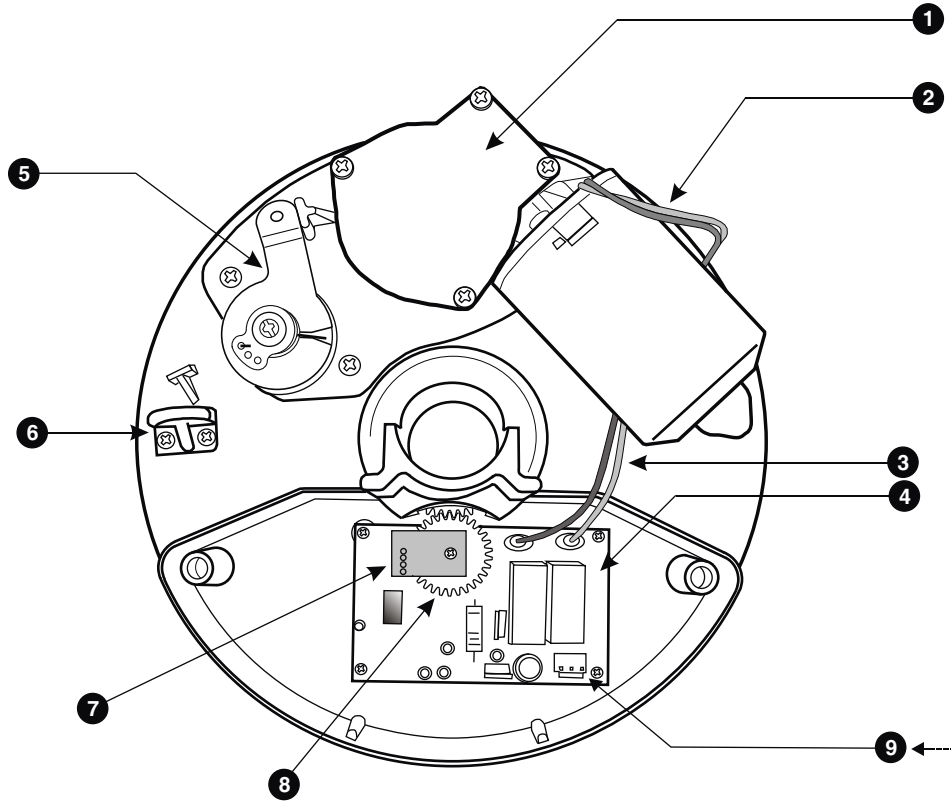


Drill with
impact setting



Spanner set (17 ~ 21)

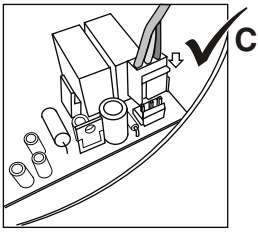
Component Detail - Head Unit



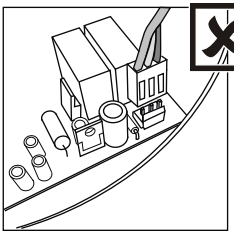
Shown with cover removed

1. DC Motor
2. Plastic unit housing
3. Motor wires (green & brown)
4. Head unit controller PCB
5. Manual Override Engage/disengage lever
6. Manual Override lanyard guide
7. Optical Pick-up
8. Optical encoder gear
9. Power and signaling connector

THE POWER AND SIGNALING CABLE (3 CORE) CAN ONLY GO INTO THE PCB IN ONE ORIENTATION WITH THE RELEASE TAB FACING DOWNWARDS. FORCING IT IN ANY OTHER WAY WILL CAUSE DAMAGE TO THE PRODUCT AND MAY LEAD TO BURNS AND/OR FIRE FROM THE RESULTING SHORT CIRCUIT.

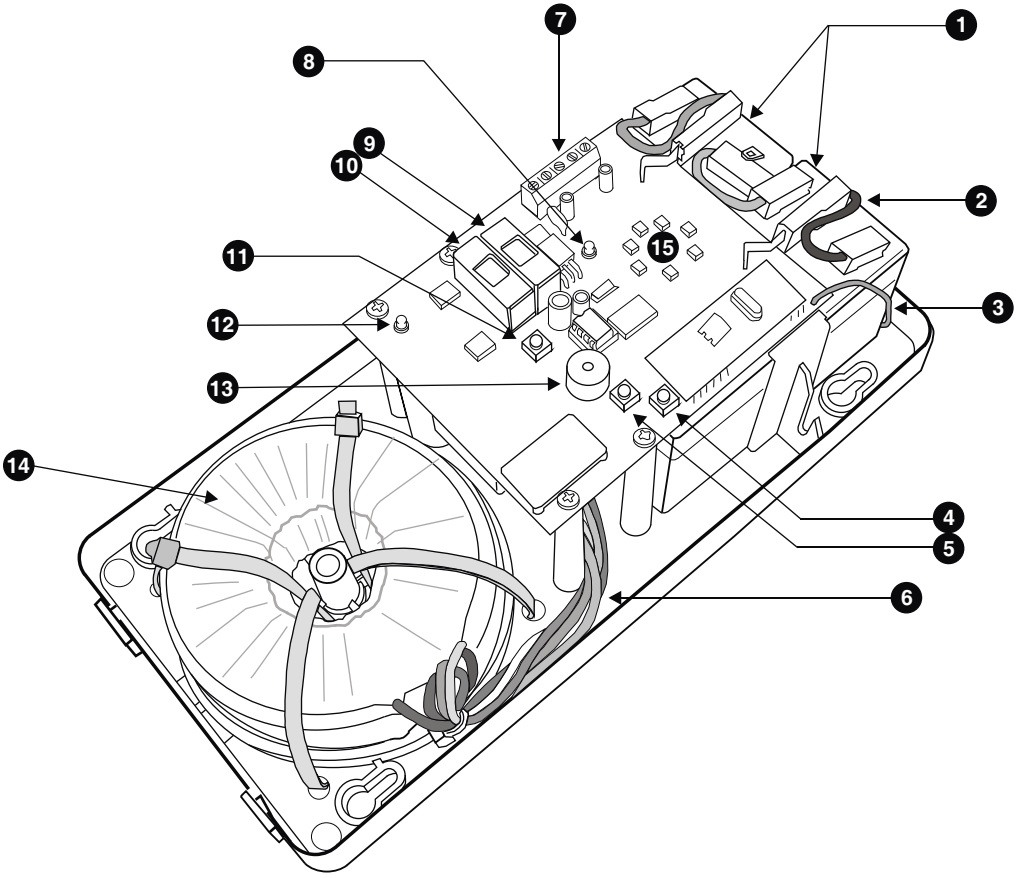


CORRECT



WRONG

Component Detail - Wall Console



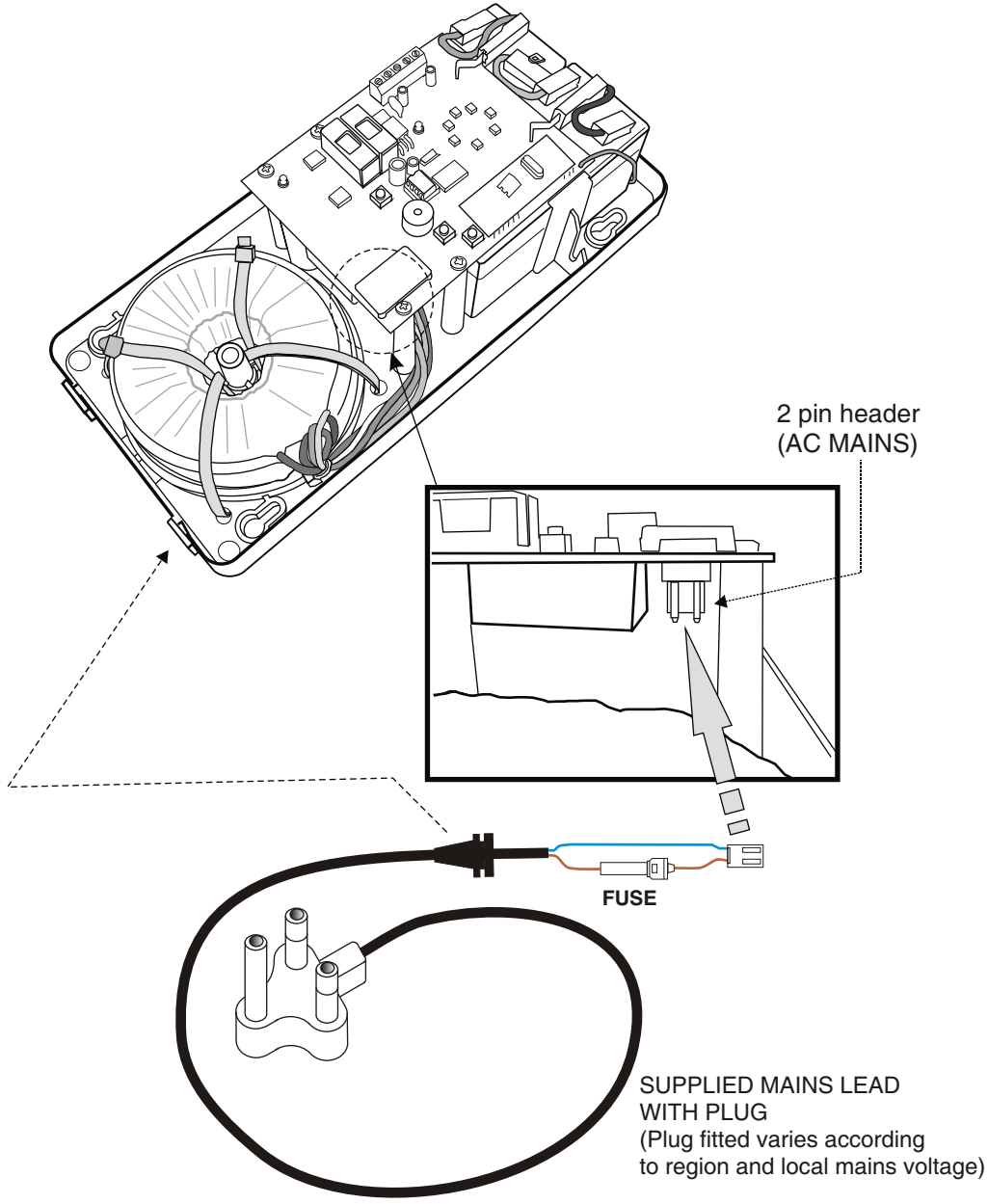
Shown with cover removed

1. Lead-acid battery (12V 1.3Ah x 2)
2. Battery interconnects
3. Remote receiver antenna lead (BROWN)
4. SET button
5. LEARN button
6. Transformer wiring loom (6 cores terminated onto Molex connector)
7. Auxillary connection terminals
8. STATUS LED indicator
9. Auxillary supply fuse (1 AMP)
10. Main fuse (5 AMP)
11. TRIGGER button
12. POWER GOOD LED indicator
13. Buzzer
14. Toroidial transformer
15. LED lamp

The product is supplied without the power and interconnecting leads fitted to the wall console. The leads are to be plugged into the wall console PC board as shown in the next section.

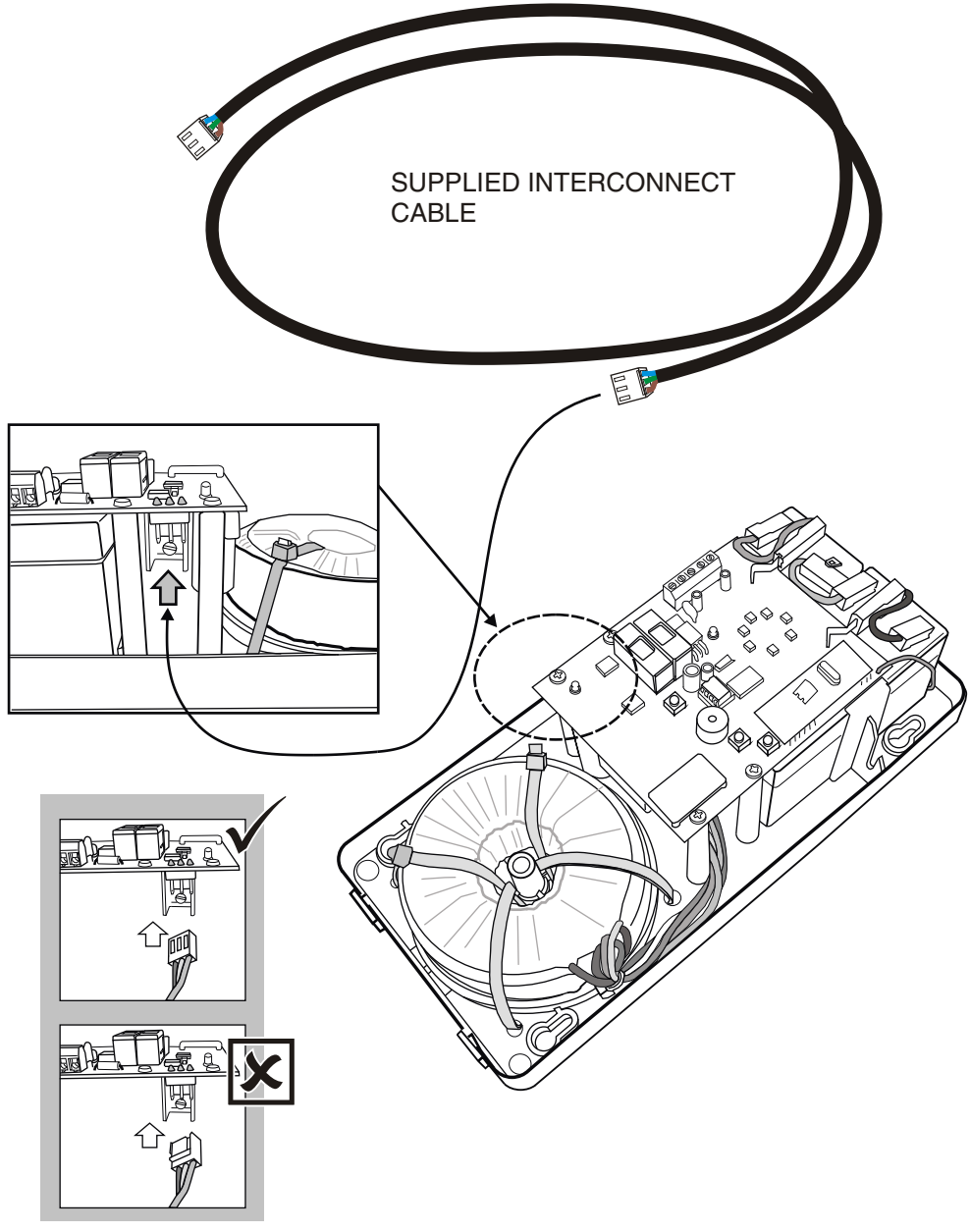
TAKE CARE WHEN REMOVING OR REPLACING THE COVER OF THE WALL CONSOLE, OR DURING TRANSPORTATION AS DAMAGE COULD RESULT TO THE LED LAMP 15

Wall Console - Fitting the cables



Locate the two pin header on the underside of the wall console PCB as shown above. Plug the two pin receptacle on the one end of the mains lead, as shown, into the receptacle. The moulded grommet, on the cable is designed to slot into a mating receptacle in the base of the wall console as shown above.

Wall Console - Fitting the cables



Locate the three pin header on the underside of the wall console PCB as shown above. Plug either end of the interconnecting cable into the receptacle. The moulded grommet, on the cable is designed to slot into a mating receptacle in the base of the wall console as shown above.

Motor Head Unit Installation

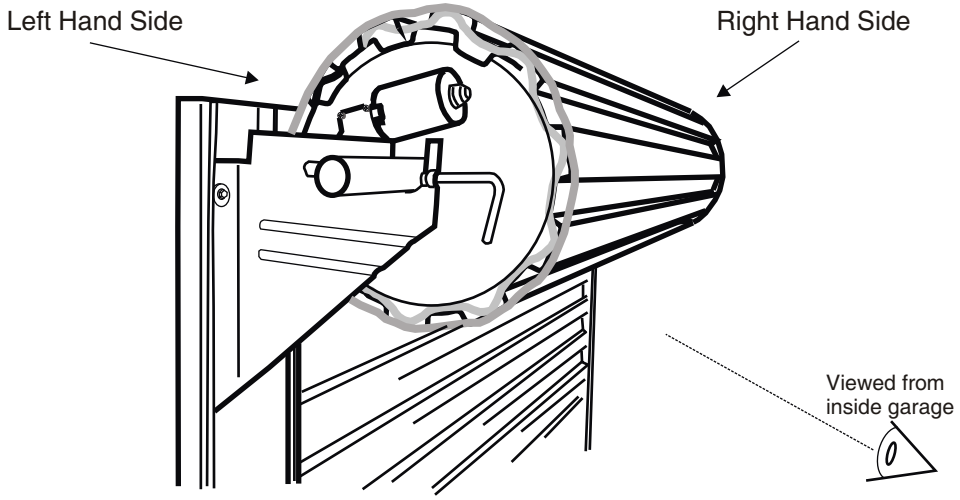
The following sections detail how to install the motor head onto the door. Please pay special attention to the various aspects of installation as failure to do so will lead to product failure and/or malfunction.

In general, two types of door design exist, the first type is the “Wispeco” type door where the door pole is mounted on a platform. The second, more common door type are those doors consisting of a retaining plate. Both types will be covered in the following sections.

In all cases, you will need to loosen one end of the door, and re-balancing will inevitably required once the motor is fitted.

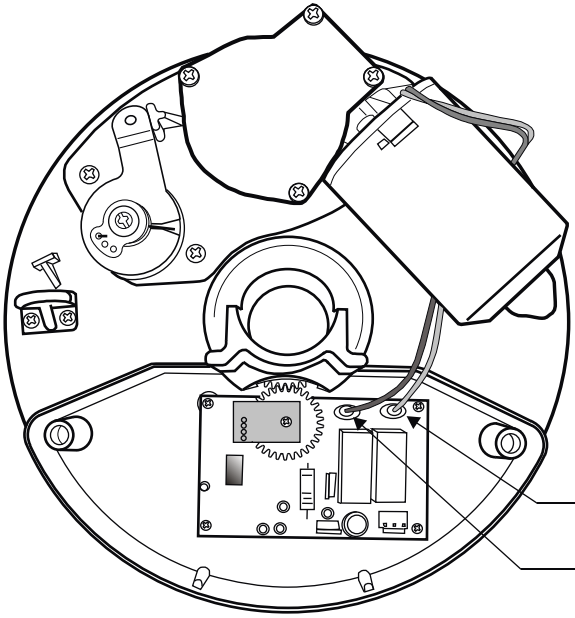
The motor may be mounted either side, where space permits, however pay special attention to the motor polarity wires as this will need to be changed according to which side the motor is installed.

Determining which side of the door is the left and right

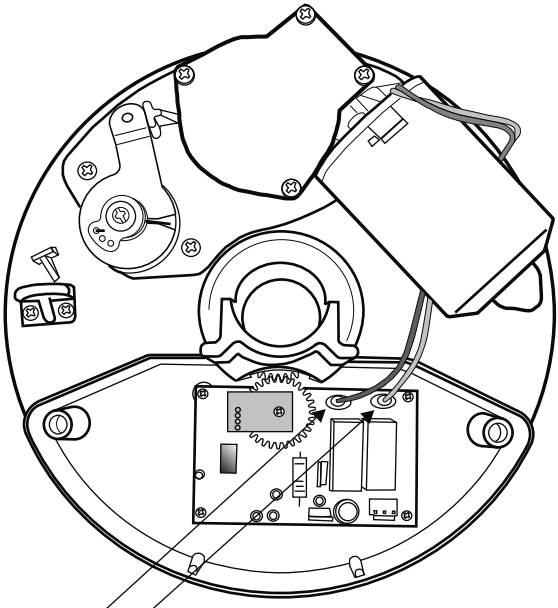


From inside the garage, i.e. where the roll is situated, looking at the door as shown, the left hand side is to your left, the right hand side is to your right. **The motor is factory shipped by default for a left hand side install.** If you would like to install the motor on the right hand side, it is necessary to swap the motor wires on the motor PCB as shown on the next page.

Motor Head Unit Installation



Factory Shipped Configuration Left Hand Side Install



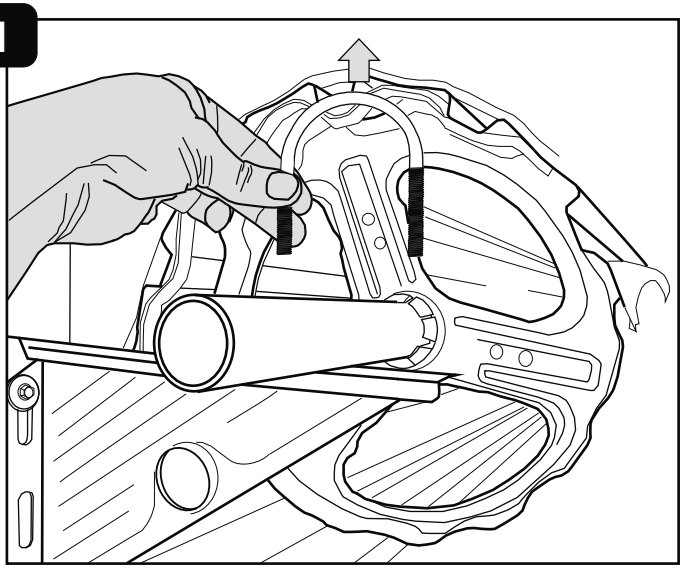
Right Hand Side Install

Motor Head Unit Installation

Once you have determined where you would like to install the motor, and have changed the motor wires accordingly (if necessary) the next step required is to loosen the desired end of the door. The tube is moved away from the door support so that the motor can be slipped onto the tube.

Most doors, predominantly the WISPECO™ doors are platform mount doors i.e. the tube rests on platforms to which it is affixed with u-bolts. Many other doors have different types of fixing systems, but the principle remains the same.

1

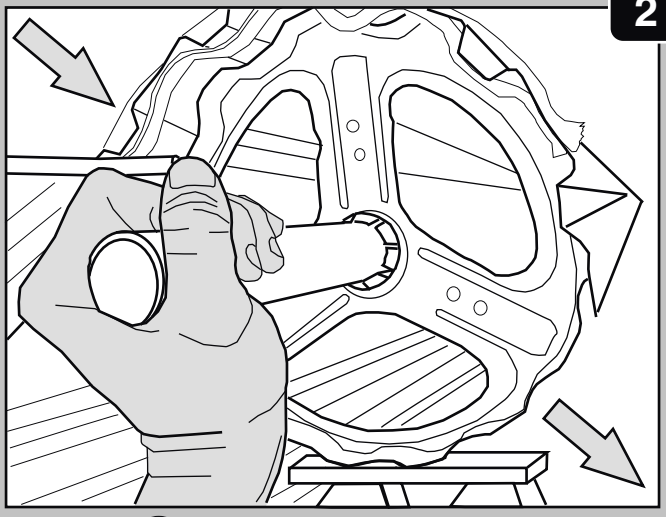


Loosen and remove the existing u-bolt completely.

2

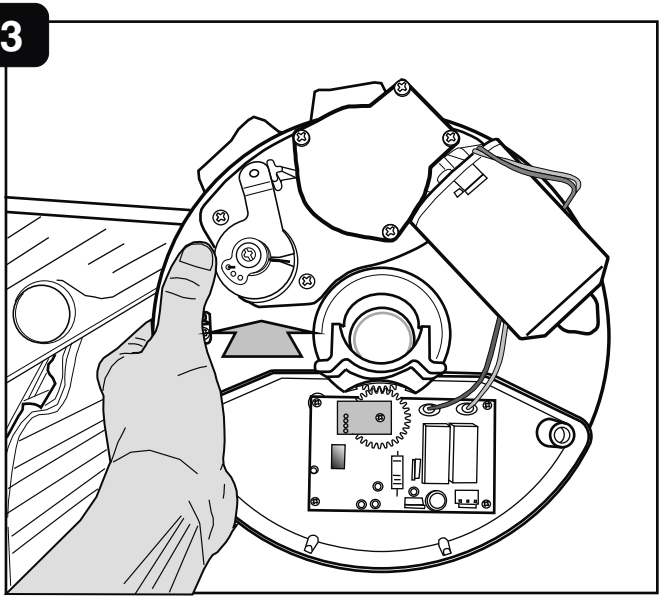
Lift tube off from the platform and away from it and lower downwards as shown.
Support using a trestle or scaffold, ensure enough space to fit motor.

Note: Other types of doors do not have platforms but side panel brackets, the procedure is the same, lift the tube off the bracket and support it as shown.



Motor Head Unit Installation

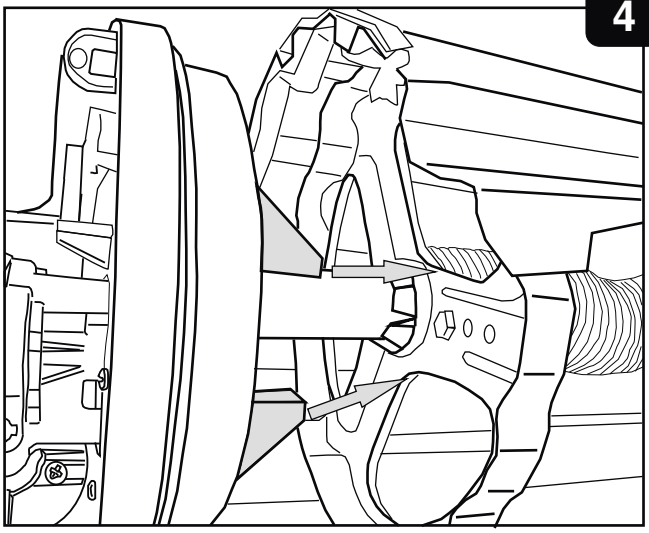
3

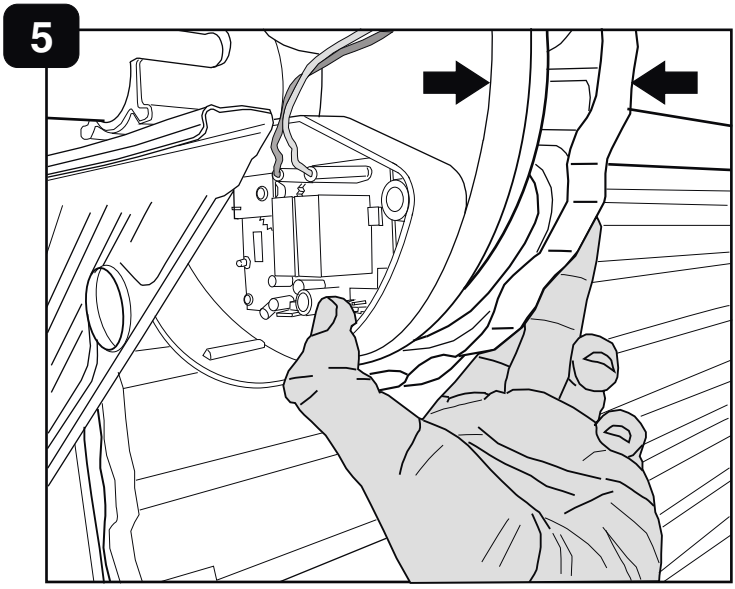


With the motor gearbox disengaged, push the motor onto the tube until it is supported on the tube. Do not yet push it against the spool wheel.

With the motor head unit on the edge of the steel tube, align the two drive hooks on the driving wheel, so that it will brace against one of the spokes of the spool wheel.

4





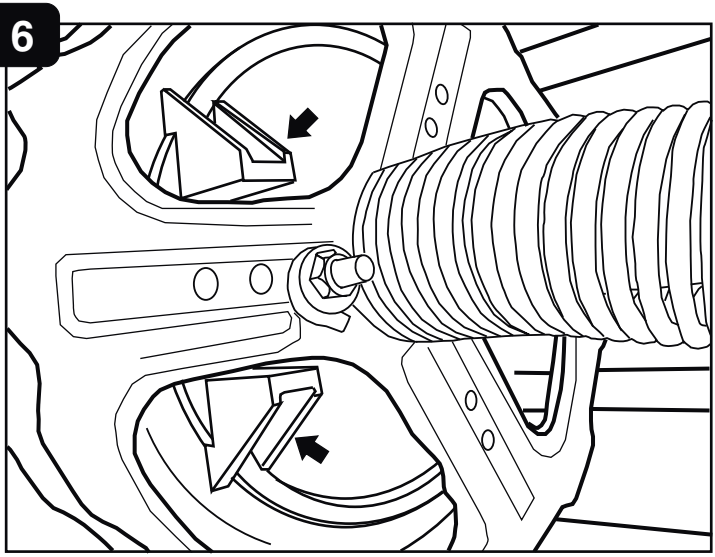
With the two drive hooks aligned as shown in the previous step, gently press the motor and the spool wheel together as shown. The motor must fit snugly against the spool wheel. Lift the door tube back onto the platform, the stem of the motor unit resting on the platform.

WARNING: if it does not fit, do not force it, instead acquire an adaptor wheel and fit it to the door, or replace the spool wheel with a SENTRY adaptor wheel.

The drive hooks are critical items and must not be damaged in any way due to being forced to fit, or by being machined. This could lead to product failure, resulting in potential injury, and damage to property. Machining of the drive hooks and/or damage to them will render the warranty null and void!

An acceptable alternative approach, is to machine material off the spoke to allow enough clearance for the drive hooks. Please be aware that there is a limit to how much this can be done, and in any case, a retrofit of an adaptor wheel is always recommended.

6



Looking at the opposite side of the motor, that is, from the driving wheel side, ensure that both drive hooks fit snugly as shown in the above diagram.

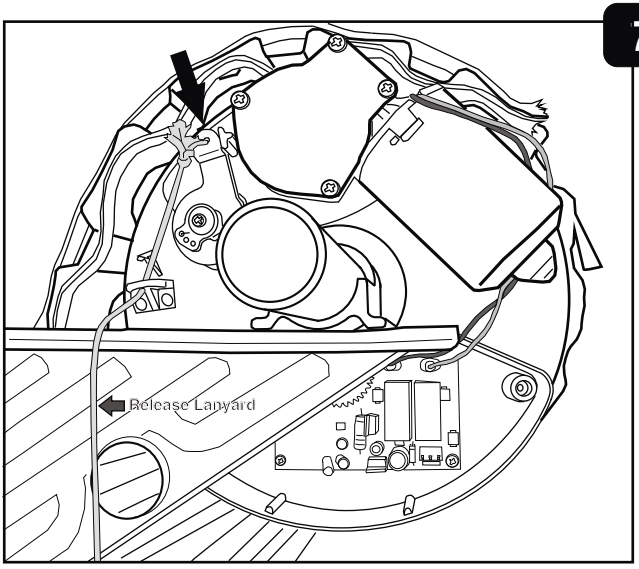
The maximum amount of clearance between the surfaces of the spool wheel and the drive hooks is approximately 1.5mm. Too much free play on either or both drive hooks, will cause product malfunction (false collisions and stopping short)

Reposition the tube, as shown here, on the platform, ensuring it is in the same position when you removed it originally.

Attach the supplied release lanyard to the release pawl and route the nylon lanyard as shown in this diagram.

Caution: ensure the release lanyard is clear of the door curtain edge at all times. Route the cord in a manner that is kept clear of the door curtain.

7



Motor Head Unit Installation

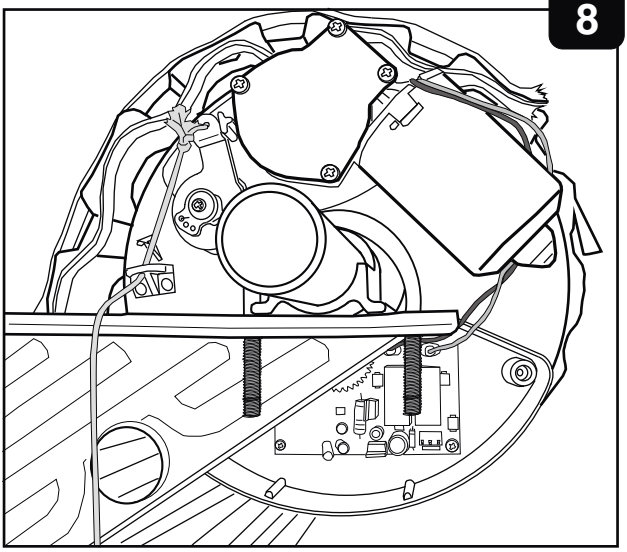
Tightening the motor and tube assembly

For platform type (WISPECO™) doors, replace the original u-bolt. Inspect the washers and nuts and replace if needed
For other types of doors, you will need to use the supplied u-bolt, cut and drill a baseplate, and install as shown in the following sections **from page 22 onwards.**

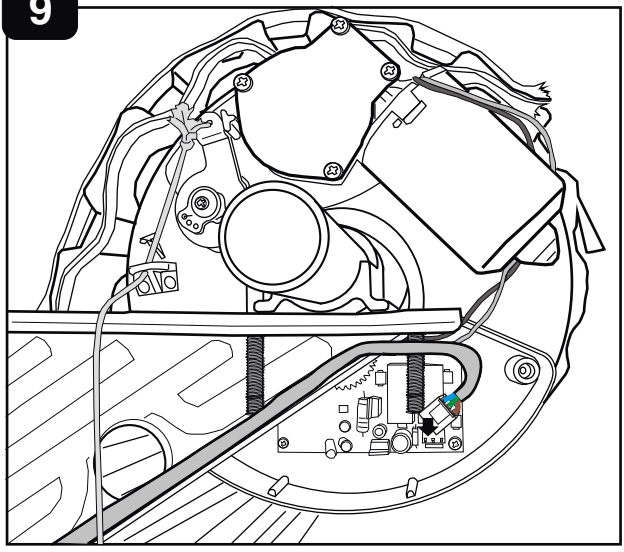
Reinstall and tighten the original u-bolt as shown alongside. Be sure to tighten the u-bolt nuts sufficiently so that the stem of the motor unit is clamped securely, and cannot slip sideways off the platform. It may be necessary to fit washers beneath the nuts to achieve optimal tightness.

Note: In some instances it will be necessary to fit the cover before tightening the motor as it will be difficult to get the cover on afterwards.

8



9



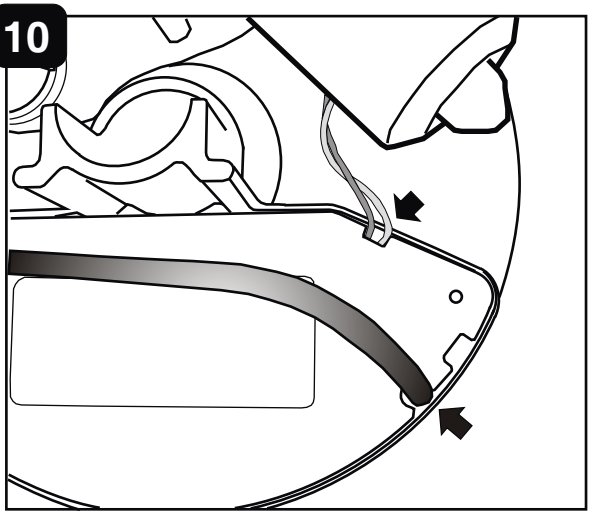
Connect the free end of the supplied interconnect cable to the receptacle on the PCB as shown. Route the cable along the platform edge to keep it away from the door curtain edge.

⚠ **Caution: Ensure there is enough cable slack in the portion that enters the PC board compartment so that fitment of the cover is not problematic!**

⚠ **Refer to Page 10 for correct plug orientation!**

Motor Head Unit Installation

10

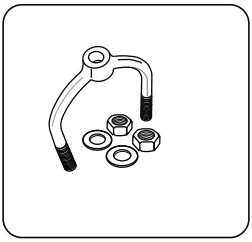


When fitting the cover, route the motor wires and the interconnecting cable through the slots in the cover as shown. The cover is a press-fit, it is not affixed with screws.

Once the motor is attached to the door, the u-bolt may be fastened. With the motor disengaged, the door needs to be checked for balance, and if necessary, adjustments made. Additionally if the door is light, it will be necessary to add weight at the bottom, using a length of angled steel as listed under “Required Equipment”

Tightening the motor unit on a door with side plates (KRAZI-DOOR, etc..)

For KRAZI DOOR (and other similar doors) it is necessary to fabricate a steel baseplate and use it in conjunction with the supplied u-bolt. This configuration is the only acceptable one - not doing this exactly as shown will lead to product failure which is not covered by warranty!



Using steel bar, as indicated in "Required Tools and Equipment", fabricate a steel baseplate with the following dimensions:

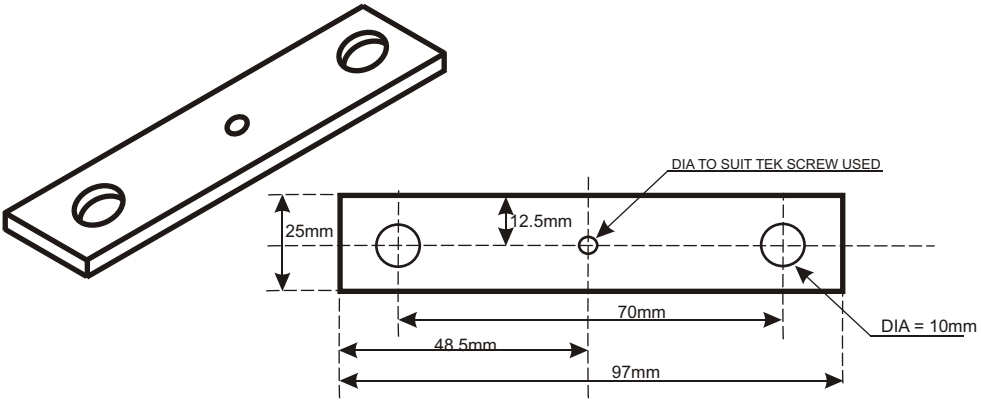
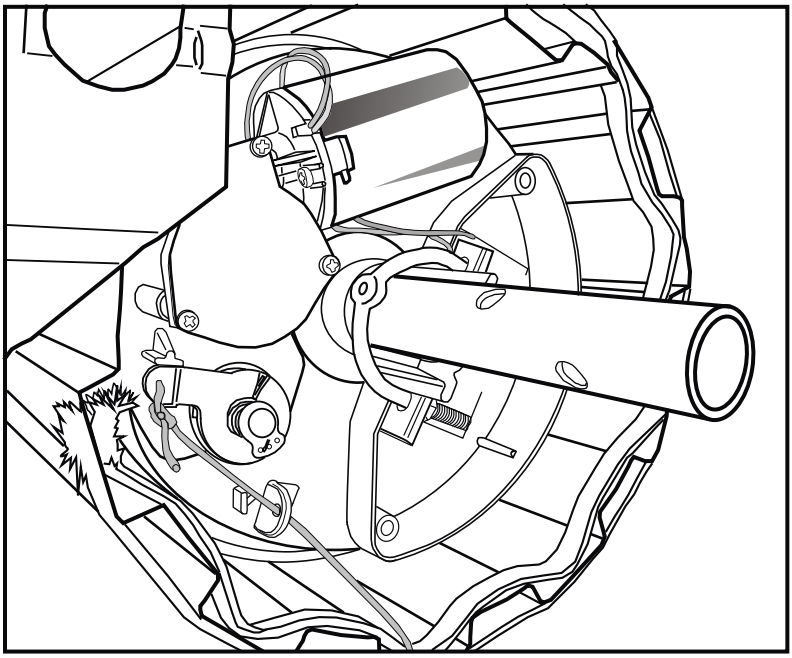


PLATE THICKNESS = 5~7mm

Notes:
Ensure all holes are drilled correctly- if they are too small it will be difficult to install the u-bolt assembly with this baseplate.

Use of material thinner than 5mm is not recommended as it will distort and fatigue due to the forces the door exerts on this part.

Motor Head Unit Installation

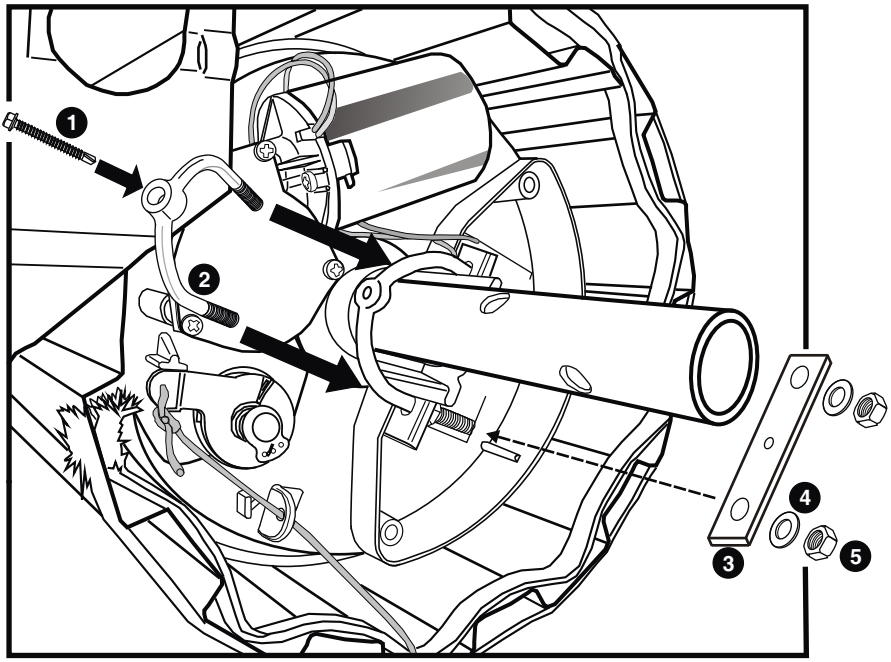


The above figure shows how the u-bolt fits over the tube, and restrains the motor unit to the tube, without reliance on a platform or interfering with the side plates.

The motor can be mounted, on these kinds of doors, in any position. Generally the position is chosen to best permit the routing of the power cable and the release lanyard.

On the next page, the sequence to assemble the u-bolt is shown.

Motor Head Unit Installation



Step 1 - Fit the u-bolt over the motor unit stem as shown
Step 2 - Fasten the u-bolt to the tube by means of a tek screw (a hole will now be made in the tube, locking the u-bolt securely in place)
Step 3 - Fit the baseplate onto the ends of the u-bolt
Step 4 - Fit the washers and the nuts
Step 5 - Tighten the nuts, reasonably tight. DO NOT OVERTIGHTEN

Once the motor is attached to the door, the tube may be reinserted into the bracket and the steel retaining pin replaced. With the motor disengaged, the door needs to be checked for balance, and if necessary, adjustments made. Additionally if the door is light, it will be necessary to add weight at the bottom, using a length of angled steel as listed under “Required Equipment”

Wall Console Installation

The wall console is designed to be affixed to any surface using a variety of screws. Four keyhole style mounting holes are provided in the base of the wall console for easy mounting on a variety of surfaces. In most cases the unit will be affixed to a wall, and the four supplied masonry wall anchors provided, should be used.

Mounting Distance From Motor Head Unit

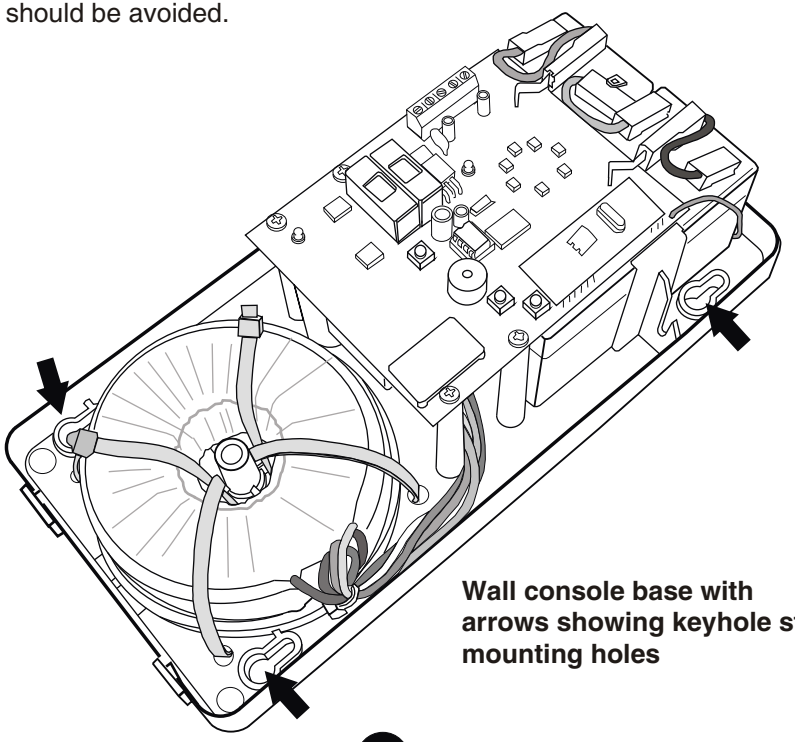
In most cases, the length of the supplied interconnect cable is the general rule of thumb. However in some instances it may not be possible to mount the wall console this close to the motor. The interconnect cable may be lengthened, but by an additional **2 metres only.** This is achieved using three core cabtyre (1,25mm² or greater).

Mounting Template

To assist with marking off hole locations on the surface where the wall console is to be mounted, a template is provided, which is located in the centre of this manual and may be pulled out.

Mounting Considerations

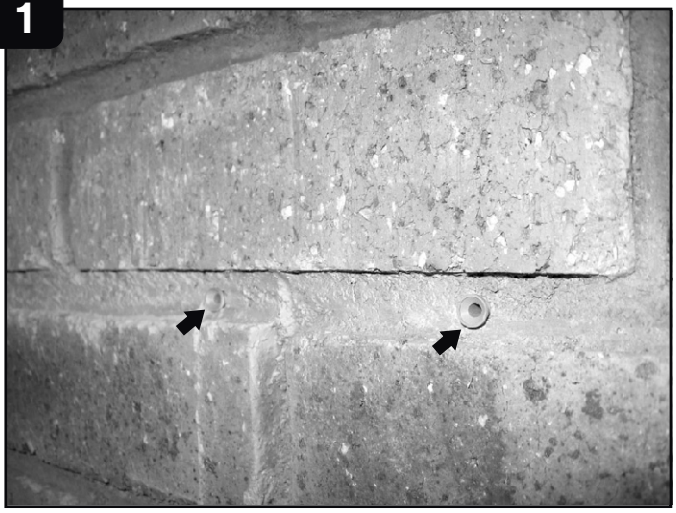
The wall console should be mounted in a location that is dry and not subject to moisture. It should also preferably be mounted at a convenient height, but not too low as this would affect remote control reception. Mounting on or near very large metal structures should be avoided.



Wall console base with arrows showing keyhole style mounting holes

Wall Console Installation

1



For typical masonry (brick wall) mounting, it is recommended to install the nail in anchors as shown.

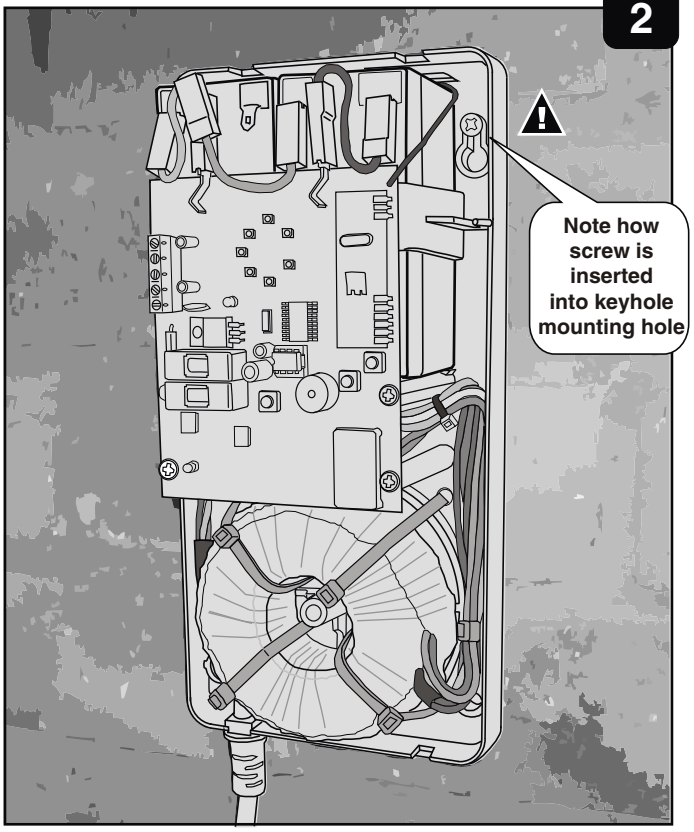
The plastic sleeves are inserted into the wall first after being drilled with the hammer drill.

Once the sleeves are inserted into the wall, the wall console may be mounted onto the wall.

⚠ Be careful when inserting the steel screws, do NOT hammer them in, use a screwdriver (or cordless screwdriver) to gently screw them into the wall.

Once the wall console is mounted, ensure that is secure and cannot be pulled from the wall or mounting surface.

2



System Commissioning Procedure

This section explains the steps to be followed to commission the DCC02 post fitment and installation on the door. Commissioning involves powering the system for the first time, programming the limits, as well as additional electrical connections as may be required for some applications.

Standard Installation

In most cases, the DCC02 will be installed in a stock-standard configuration without any ancillary systems attached (beams, status indication extension, external receiver). If this is the case, you can proceed directly to the section “System Power-Up”

Enhanced Installation

The DCC02 supports the use of safety beams to prevent injury to persons who are likely to come into the path of a closing door. The use of a beam also offers peace of mind when a door is likely to be triggered whilst a vehicle is moved in or out of the garage.

⚠ The use of a beam is MANDATORY when the auto-close feature is enabled! Failure to install a beam when auto-close is enabled can lead to property damage and/or injury from a door that starts without warning.

In addition to beams, the DCC02 also supports the use of other remote control receivers, as may be necessary in some installations (particularly when a compatibility issue arises and the existing systems cannot be migrated to a SENTRY remote control product).

Enhanced Installation Detail

The following sections explain electrical and other details pertaining to enhanced installations

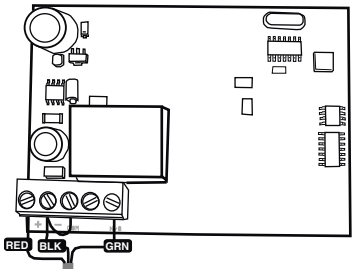
Using an external receiver with the DCC02

The DCC02 accommodates most any type of external receiver and provides a convenient power source for the receiver, which should be mounted externally to the wall console. The wall console provides a 24V DC supply for ancillary items, therefore it is important to ensure that the receiver you intend using, can operate from 24 volts. Most third-party receivers are able to operate from a 24 volt supply.

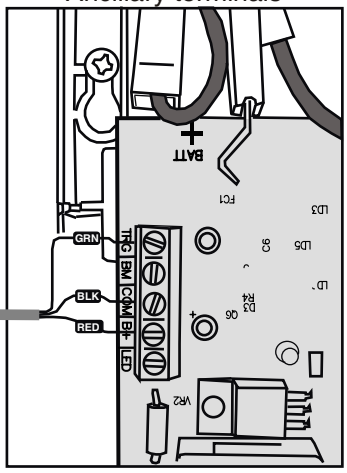
The receiver you intend to use, must have a normally-open potential free relay contact. Receivers that output a “logic level” are not suitable.

Connection Diagram for External Receiver

External Receiver



Close up of wall console
Ancillary terminals



Cable: 4 core “comms” cable

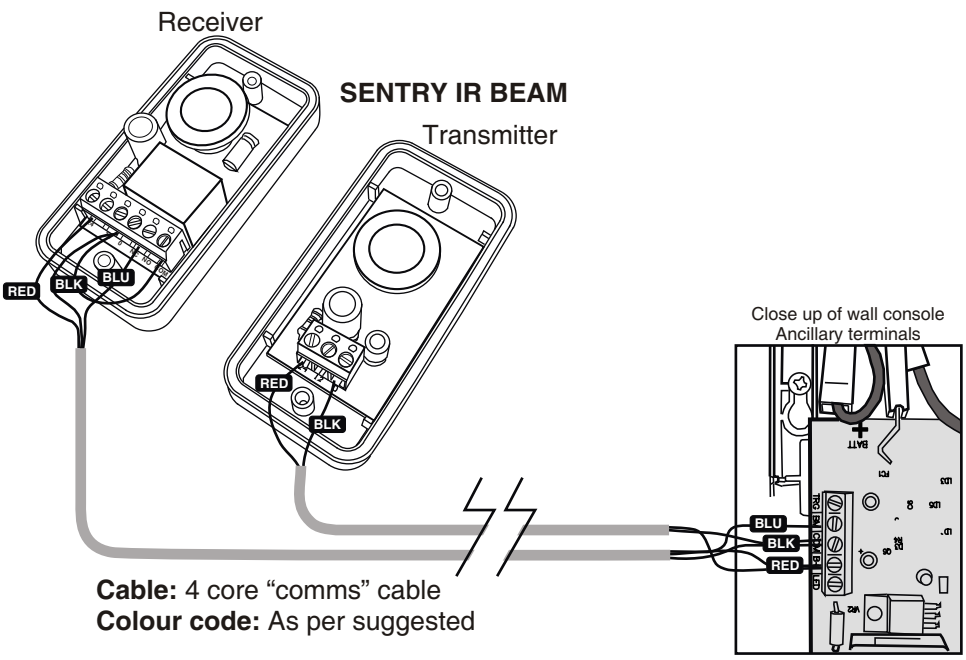
Note that the common of the relay contact on the receiver is connected to the negative terminal of the receiver, therefore only three wires are needed.

Wall Console Terminal	Description	Receiver Terminal
TRG	Trigger	**N/O**
COM	Common	**- & COM**
B+	24V Positive Supply	**+ or +12/24**

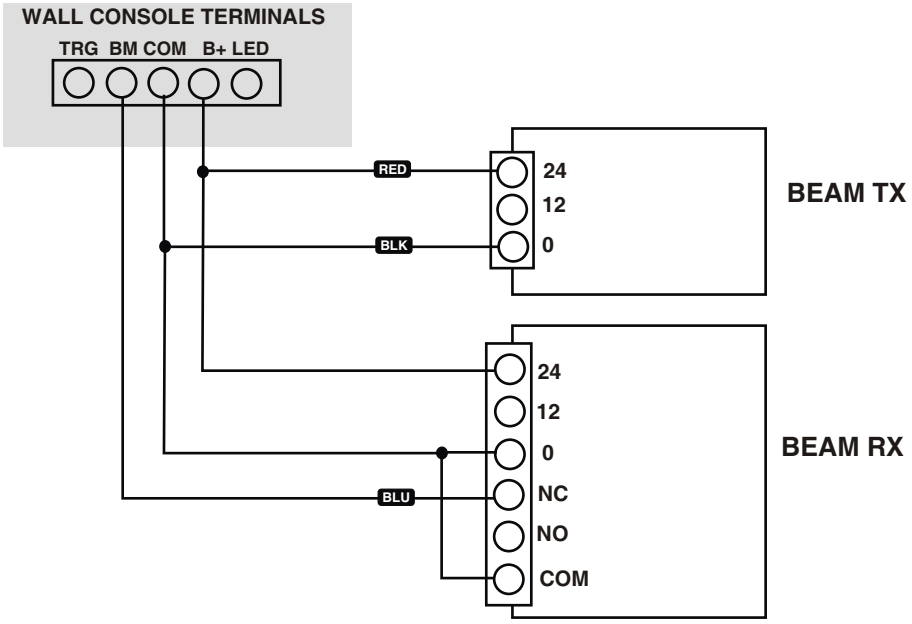
Ensure that the receiver you intend to use, can operate from a 24 volt DC supply.

System Commissioning - Beams

Connection Diagram for Infra-Red Safety Beams



Cable: 4 core “comms” cable
Colour code: As per suggested

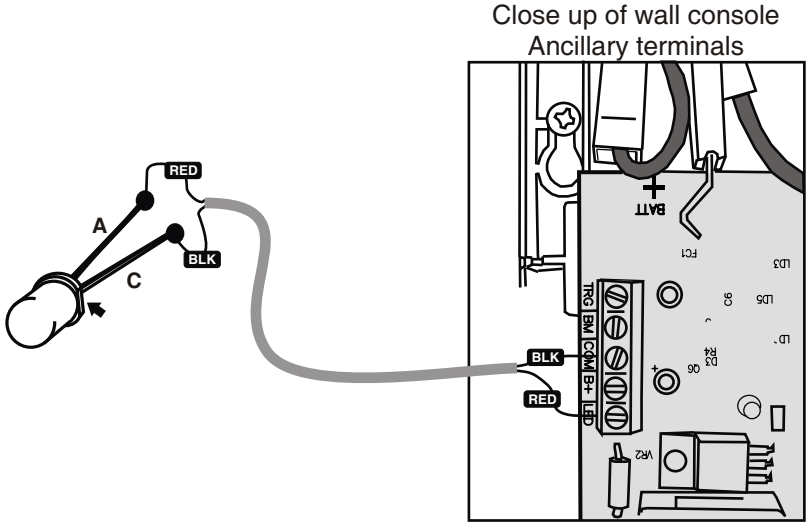


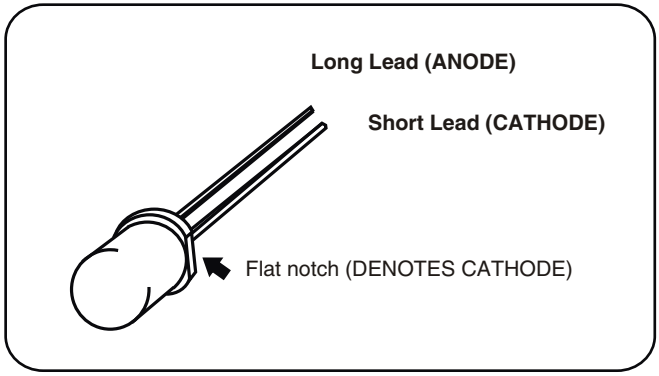
System Commissioning - Remote LED

Connection Diagram for installing a remote status LED

A remote STATUS LED allows the user to know the status of the garage door (open, closed or trouble) from a remote location within his/her residence. A standard 5mm RED LED is required for this feature (not supplied).

No series resistor is required and the line has protection against lightning.





⚠ Take care when mounting the LED on a panel or when bending the leads apart to solder the wires to them.

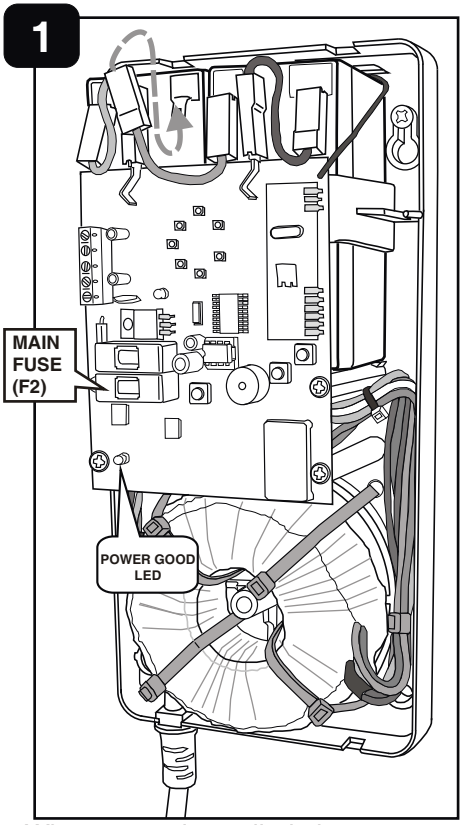
The maximum length of cable run is 15 -20 metres. Use thicker cross-section solid copper wire for longer runs otherwise LED brightness will be imparied!

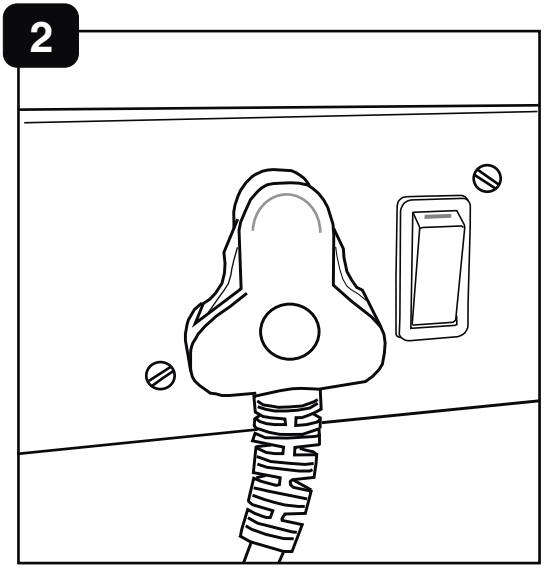
Powering Up the System

Once installation is complete, and, if applicable, the connections to beams and/or an external receiver has been made, the system can be powered up by connecting the batteries first (linking the terminal as shown below) and then by plugging in the mains lead into an outlet and turning it on.

Powering Up

1. Connect the batteries by connecting the loose terminal, to the battery as shown
2. Plug the mains lead into a wall outlet and turn it on.





On the drawing opposite, note the location of the main fuse F2. This is the first point to check when troubleshooting. Also see Page 32 for a detailed description

When power is applied, the system will give two high frequency beeps, signalling that the system has powered up. The system signals various conditions using audio-visual indications. The POWER GOOD LED lights when power is present.

♪ high frequency beep, generally indicating confirmation or a change in status.

♪♯ low frequency beep, generally indicating error conditions or trouble.

Powering Up (cont..)

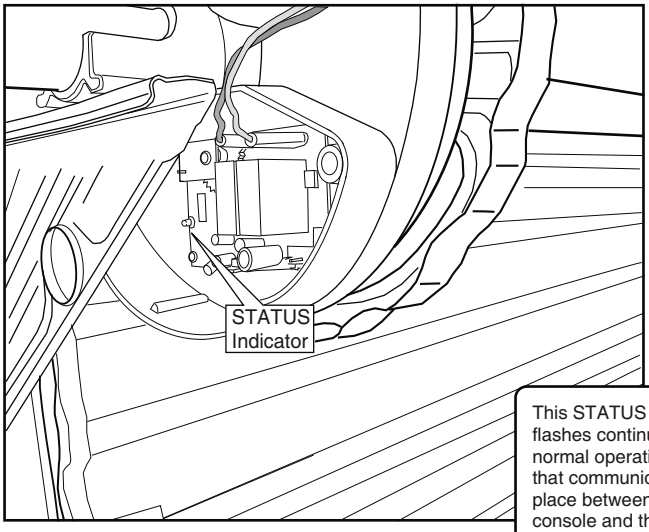
If the system has powered up correctly, there will be no further beeps. However, if there is a problem, the system will emit error beeps and flash an error code on the STATUS LED. These issues MUST be resolved before the system can enter limit programming. Two possible situations could exist post power-up:

x 2 - two low-frequency beeps! This indicates **MAINS FAILURE**
x 4 - four low-frequency beeps! This indicates **COMMUNICATIONS FAILURE!**

These system errors can be resolved by working through the “Troubleshooting” section on page 44. However the following quick checks can be performed:

MAINS FAILURE: Check inline fuse on the supplied mains lead. If blown, replace with a 1 AMP SLOW BLOW glass cartridge fuse.
COMMUNICATIONS FAILURE: Check if there is power on the head unit by removing the cover and seeing if the STATUS LED on the PC board flashes (see below), if not, measure the two outer terminals of the interconnecting cable with a multi-meter. The reading should be 25-29V DC. If no voltage is present, check the main fuse on the wall console designated **F2**. Replace if blown. If this fuse continues to blow, check the interconnect lead orientation, and especially the wiring if you have extended the lead.

When F2 blows on the wall console, it is generally indicative of a short circuit on the DC supply. Replacing this fuse with a fuse of higher rating can cause a fire, serious burns and severe product damage, which is not covered by warranty. If in doubt, please call Technical Support.



This STATUS indicator flashes continuously during normal operation, indicating that communication is taking place between the wall console and the motor unit

Limit Programming

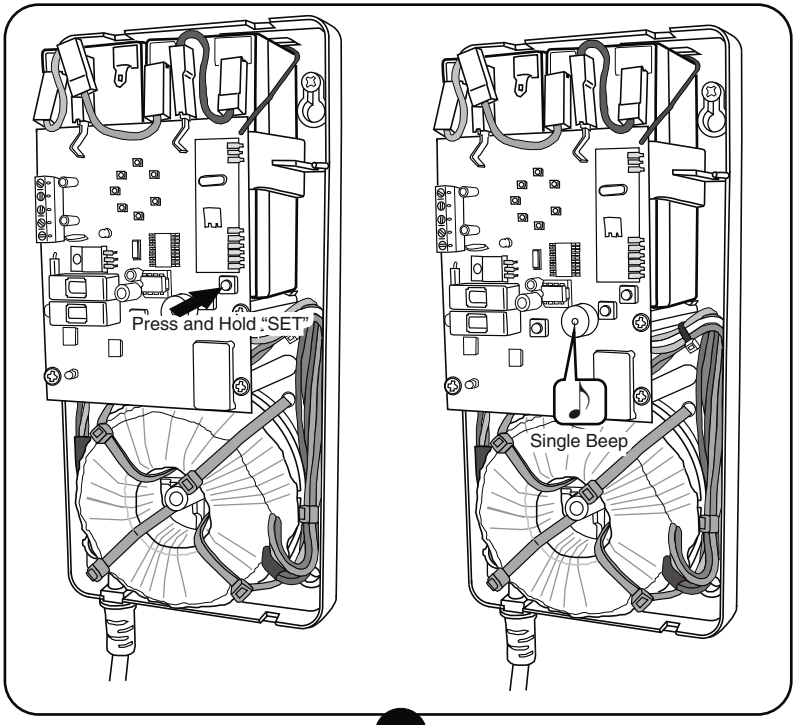
Before the garage door operator can be used, the door limits have to be programmed. This is an automated process, that involves little user input. Assuming the system has powered up correctly (no beeping) the limits can then be programmed by following the procedure in the following sections.

In the factory shipped state, the system will only accept a Limit Setup command, all triggers are ignored until the door is set up correctly. This is not a fault, it is for your safety.

To invoke Limit Programming

1. **Close the roll-up door completely** and ensure that the door seats properly on the floor. **Ensure the door is ENGAGED.** If you cannot lift the door, it is engaged, if not, pull the mechanical release cord until the door is locked.
2. Remove the wall console cover, and press and HOLD SET, until a beep is heard. The door will begin to open slowly.

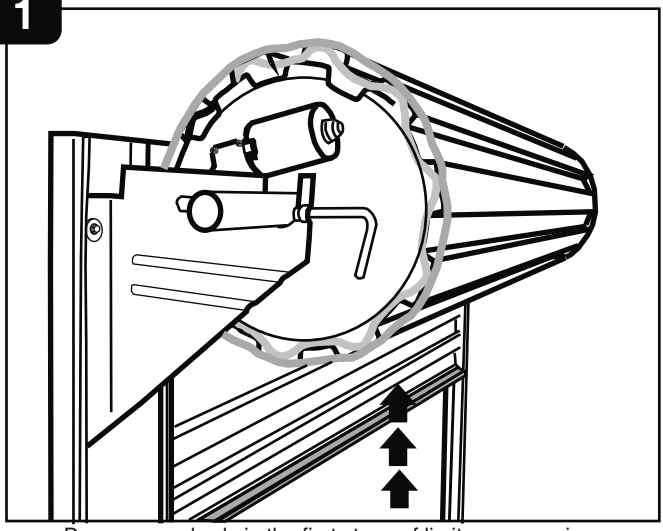
When running the Limit Programming utility, please ensure that the batteries have had sufficient time to charge (usually 3-4 hours from the factory) and that the batteries are connected. Performing Limit Programming without batteries connected is not permitted, and will lead to product failure.



Limit Programming (cont)

The door will open slowly until the end-stop is encountered. When the endstop is encountered, the door will stop for a few seconds, then close at full speed, then stop. It will wait for a few seconds and then open fully at full speed. This is done in order to measure various parameters needed to set the collision sensitivity automatically, amongst other parameters.

1



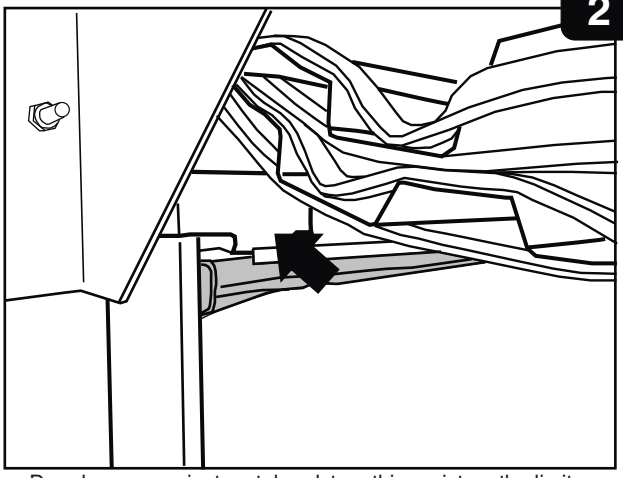
Door opens slowly in the first stage of limit programming

The door will open slowly until the end-stop is encountered as shown.

⚠ The endstops MUST be secure or the setup will fail. The endstops must also be straight and equally spaced on both sides to prevent the formation of gaps when the door is closed.

⚠ Safety inputs (BEAM) and the trigger input are unresponsive during this procedure. Ensure no people, pets or property can land in the path of the moving door curtain.

2

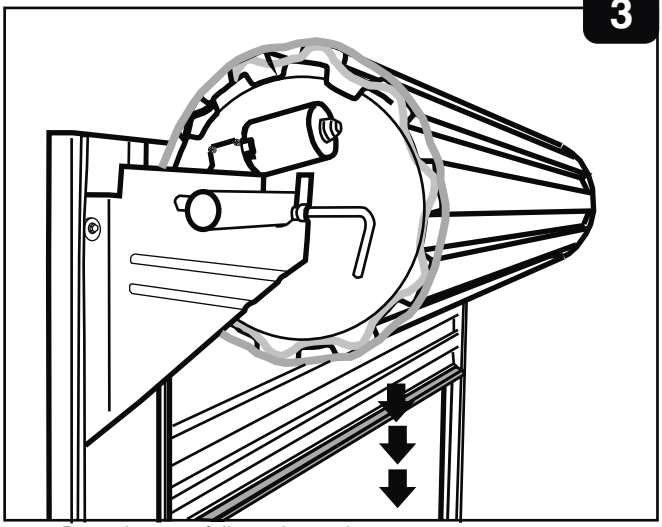


Door homes against metal endstop, this registers the limit. The motor then stops.

System Commissioning - Limits

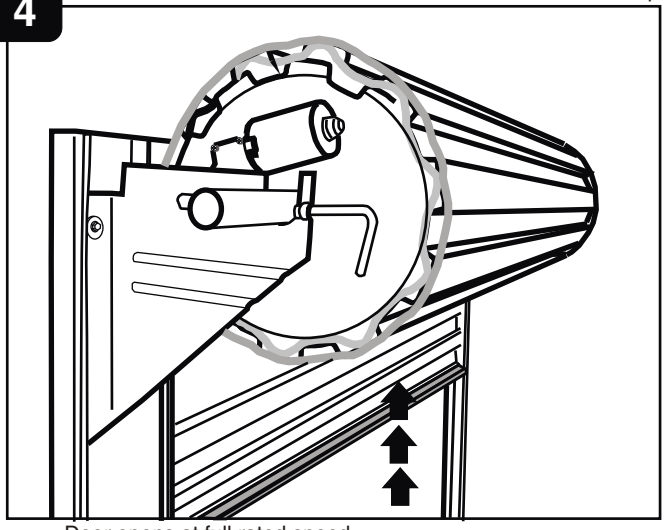
Once the upper limit has been registered (stall against endstop) the door will close automatically at full speed. The door will slow down and stop fully closed.

3



Door closes at full rated speed

4



Door opens at full rated speed

The door will then open at the full rated speed and will stop at the end limit. Instead of homing against the end stop, a small gap will be evident between the door curtain edge and the endstop. This gap is computed by the system and varies from door to door.

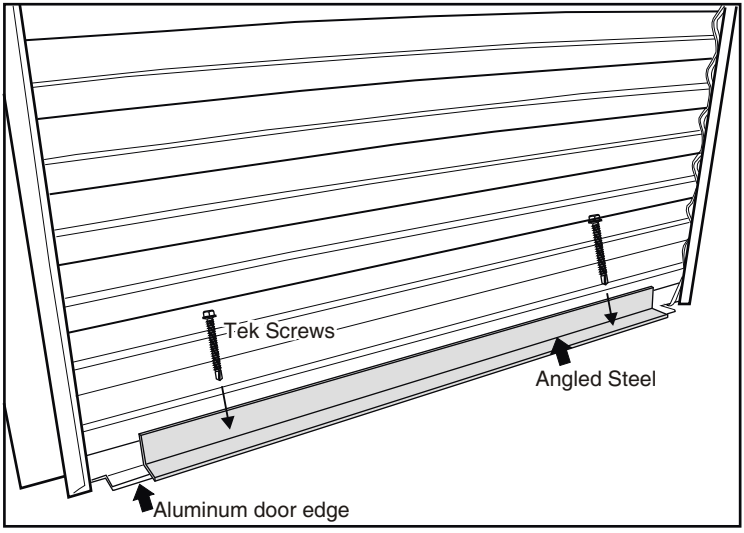
⚠ **On very light doors there may be no gap at all, which is a sign that weight may need to be added.**

Once the door is fully opened, the limit setup will be complete. The wall console will beep twice, indicating successful limit programming. From this point on, the trigger button on the wall console, as well as the trigger input and safety beam input will be active.

⚠ **If, for some reason, the Limit Programming routine fails, the system will issue one single error beep and exit the limit programming routine. The system will then be in standby and will await another Limit Programming command. Refer to the troubleshooting section in this manual for possible solutions.**

Adding weight to very light doors

In general, when the roll-up door is very light, a number of symptoms may become apparent and cause temporary malfunctions of the product. These include stopping after moving short distances and not closing completely. In these cases, it is necessary to add weight to the bottom edge of the door curtain. The recommended way of adding weight is to affix a length of angled steel to the bottom edge of the door curtain as shown:



The angled steel is attached directly to the aluminium edging of the door curtain with tek screws. Depending on the door type, other screws may be used. The steel is mounted on the inside of the door i.e. the side facing the inside of the garage.

⚠ **Once weight is added to the door, it may need adjustment. Ensure that the door is consistently easily lift-able once the weight is added.**

⚠ **Use short screws, long ones may damage the rubber at the bottom of the door curtain.**

Programming Remote Controls into the system

The DCC02 is supplied with two four code-hopping remote controls which are intended for use with this product. The user can purchase additional remote controls and add them to the system up to a maximum of 16 remote controls into the memory of the built-in receiver at any given time.

The system is shipped from the factory in a blank state, i.e. there are no remote controls learnt into the system.

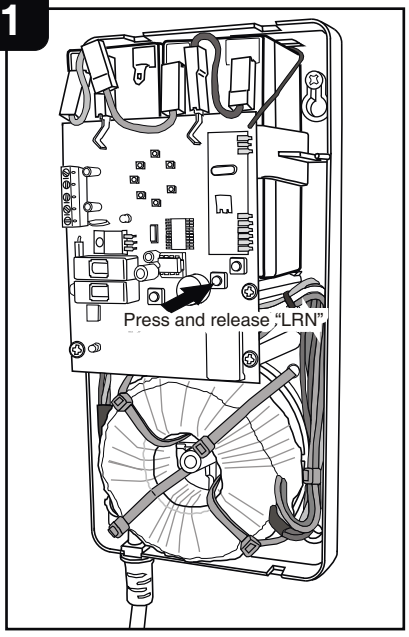
⚠ **When learning remote controls, always operate the remote control at least 5 metres away from the wall console.**

⚠ **Ensure that no other remote controls are operating in the near vicinity during this procedure as these remotes will be inadvertently learnt into the system.**

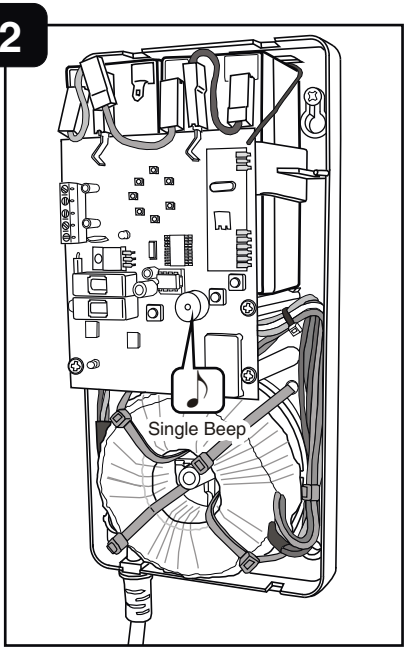
Learning a new remote into the system

The DCC02 stores remote controls in what is called “slots”. Each remote control added to the system occupies a slot. A slot can generally only be overwritten or all slots mass erased. The most common mistake is to not select an unallocated slot when adding remotes to the system, which leads to the previous remotes learnt, being overwritten. The following explains how to program the remotes correctly into the system.

1



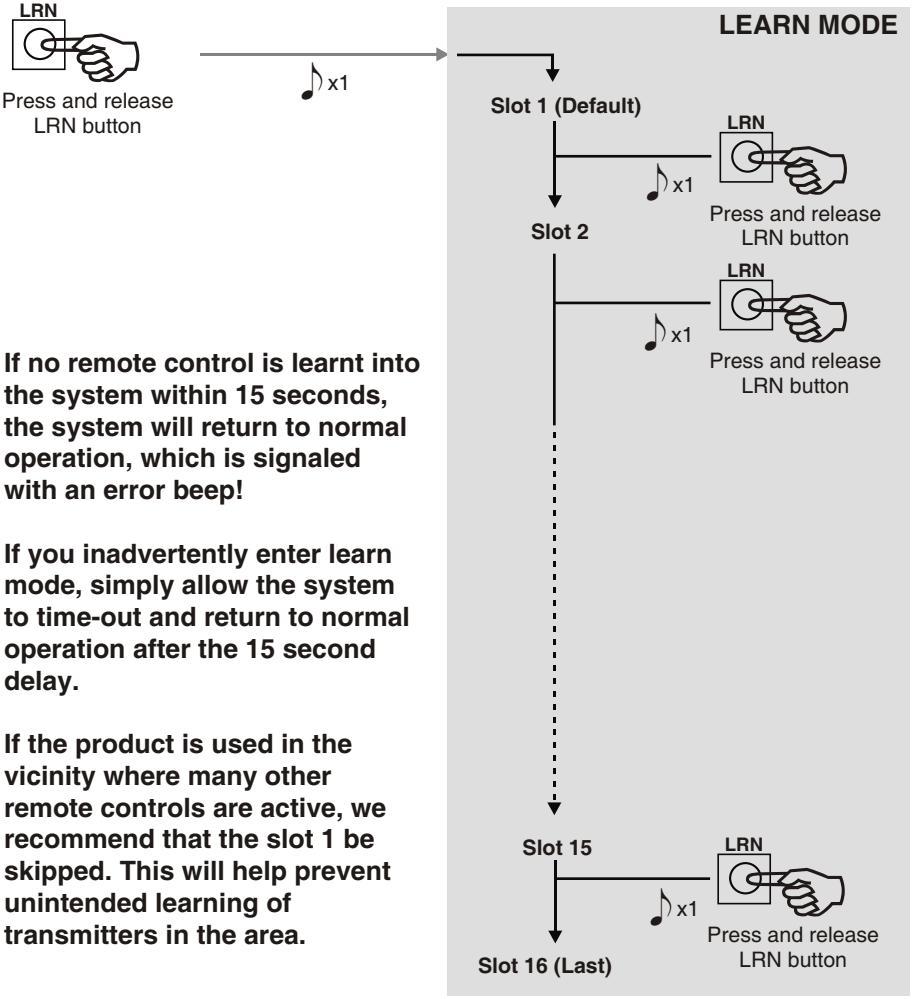
2



System Commissioning - Programming Remotes

As shown on the previous page, pressing and releasing the LRN button, switches the system into remote programming mode. A single beep indicates this.

When in learn mode, the current slot selected is slot 1. To advance to the next slot, press LRN again to advance the slot number to slot 2. When a slot is selected, and unoccupied, the STATUS LED will be off, if a slot is occupied, the STATUS LED will be lit. This aids the user in avoiding active memory locations when adding new remote controls.



If no remote control is learnt into the system within 15 seconds, the system will return to normal operation, which is signaled with an error beep!

If you inadvertently enter learn mode, simply allow the system to time-out and return to normal operation after the 15 second delay.

If the product is used in the vicinity where many other remote controls are active, we recommend that the slot 1 be skipped. This will help prevent unintended learning of transmitters in the area.

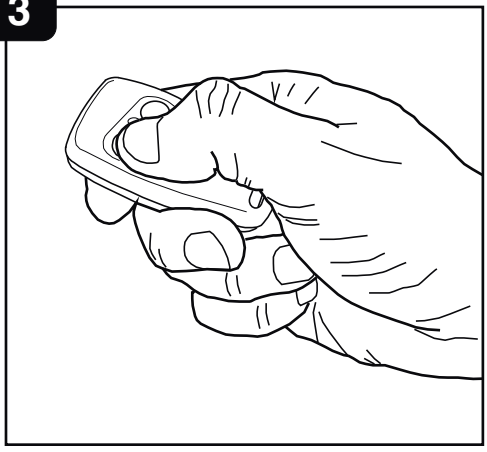
System Commissioning - Programming Remotes

Once the desired slot has been selected, operate the desired button on the remote control, to program it into the system.

Upon successful learning, the wall console will issue two confirmation beeps and exit learn mode.

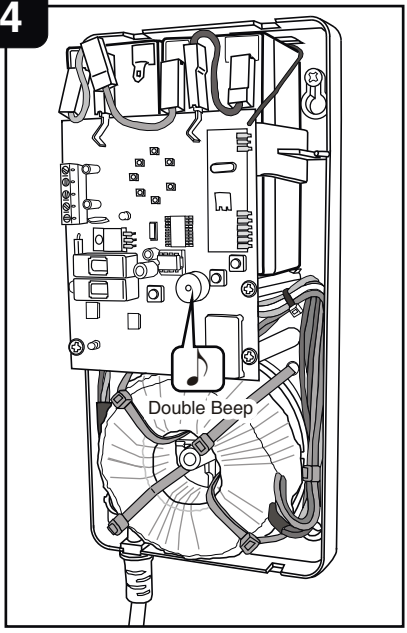
⚠ **To add more remotes, you will need to enter learn mode again and select the desired slot.**

3



⚠ **Always operate the remote control at least 5m away from the wall console when learning it into the system**

4



Once a remote control (and the chosen button) is learnt into the system successfully, pressing the learnt button on the remote control will open and close the door.

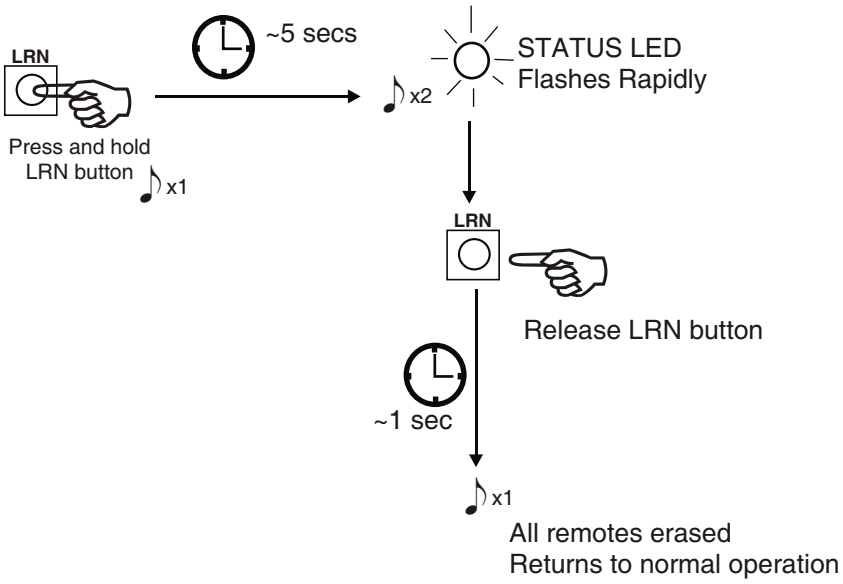
⚠ **Learning another remote control into a given slot will erase the previously learnt remote control (and button). Be careful!**

System Commissioning - Erasing Remotes

Erasing all the remote controls in the system

To erase all the remote controls in the system, in cases where there has been a security breach or to reset the remote control storage to factory defaults, the following procedure will erase all the remote controls.

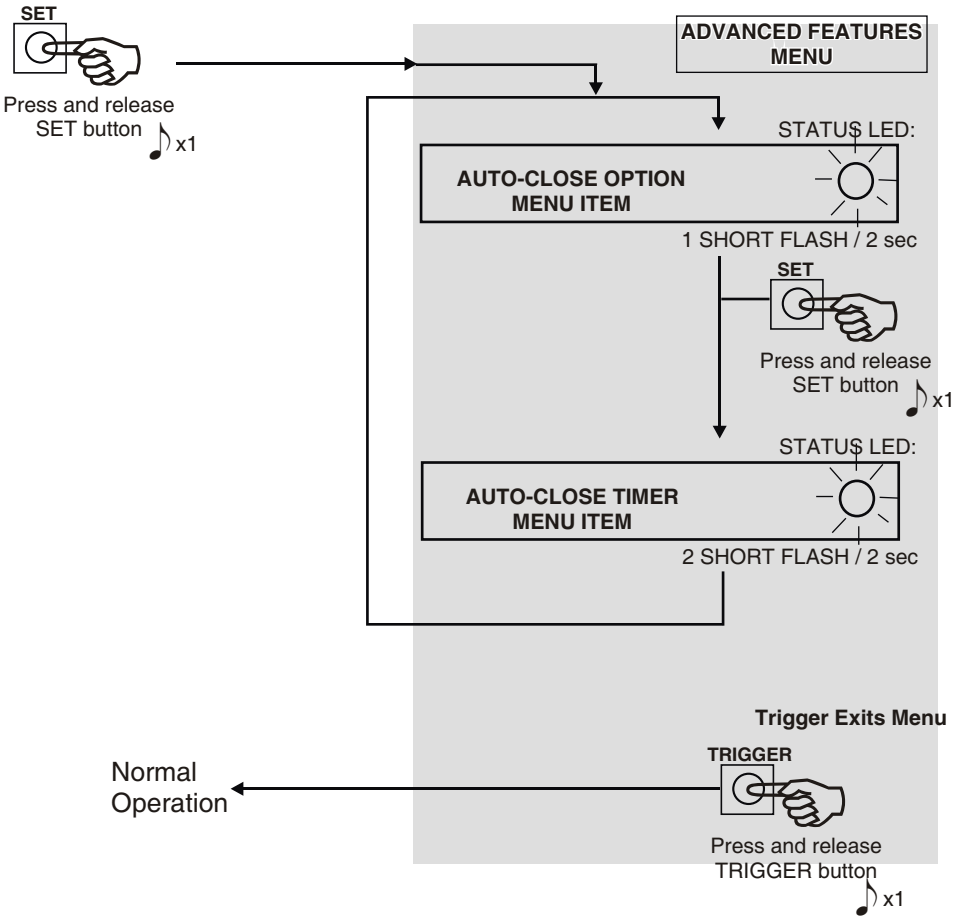
⚠ Performing this operation will render all remote controls useless. This could lead to you being locked into your own garage! Proceed with this step only if you have access to the trigger button or the manual override.



⚠ Once all remotes are erased, any existing remotes will have to be reprogrammed into the system from scratch!

Advanced Features

The DCC02 is equipped with a programmable auto-close timer, which is accessible via a menu termed the “advanced features menu”. The structure of this menu is shown as follows:



When the advanced features menu is engaged, all triggers are ignored. It is not possible to invoke the menus if the door is in motion.

Advanced Features - Auto-Close Selection

Auto-Close Function Enable/Disable

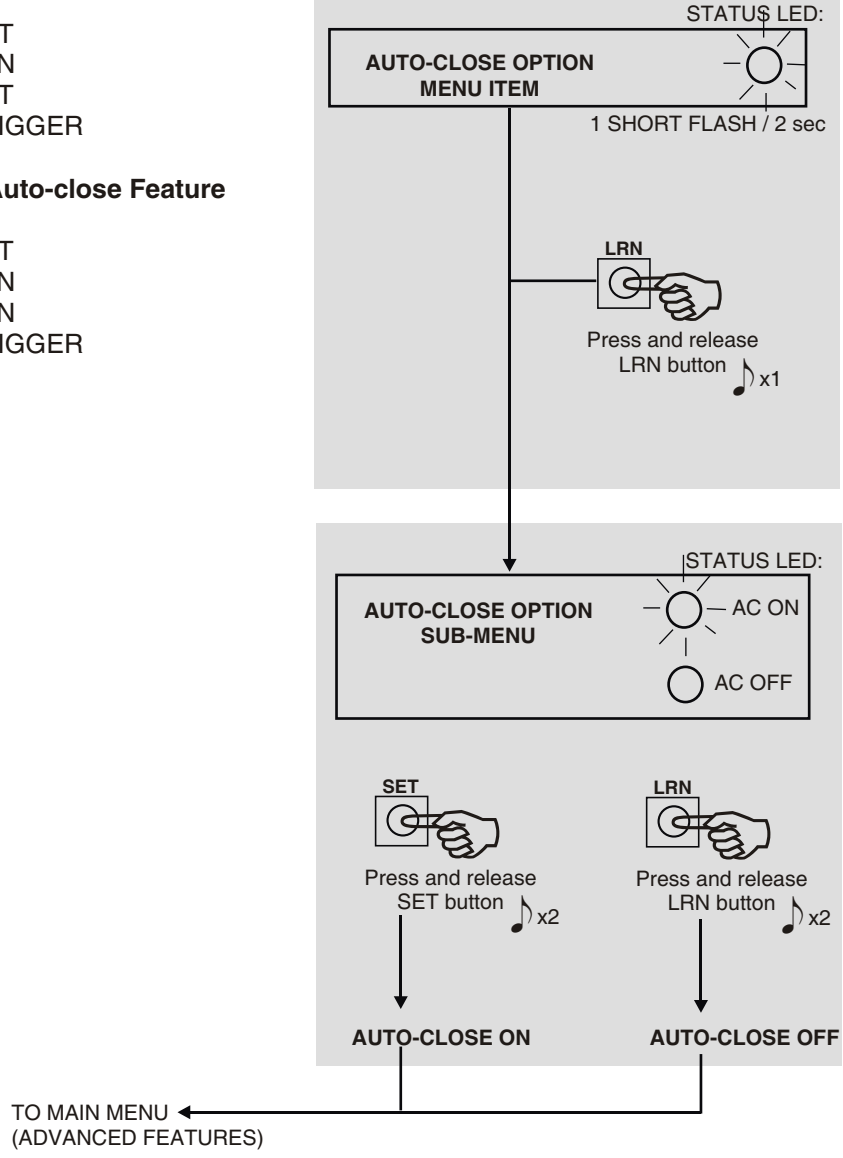
The auto-close function can be enabled/disabled as follows. Please be aware that when auto-close is enabled, there **MUST** be a safety beam present.

Enabling Auto-close Feature

1. Press SET
2. Press LRN
3. Press SET
4. Press TRIGGER

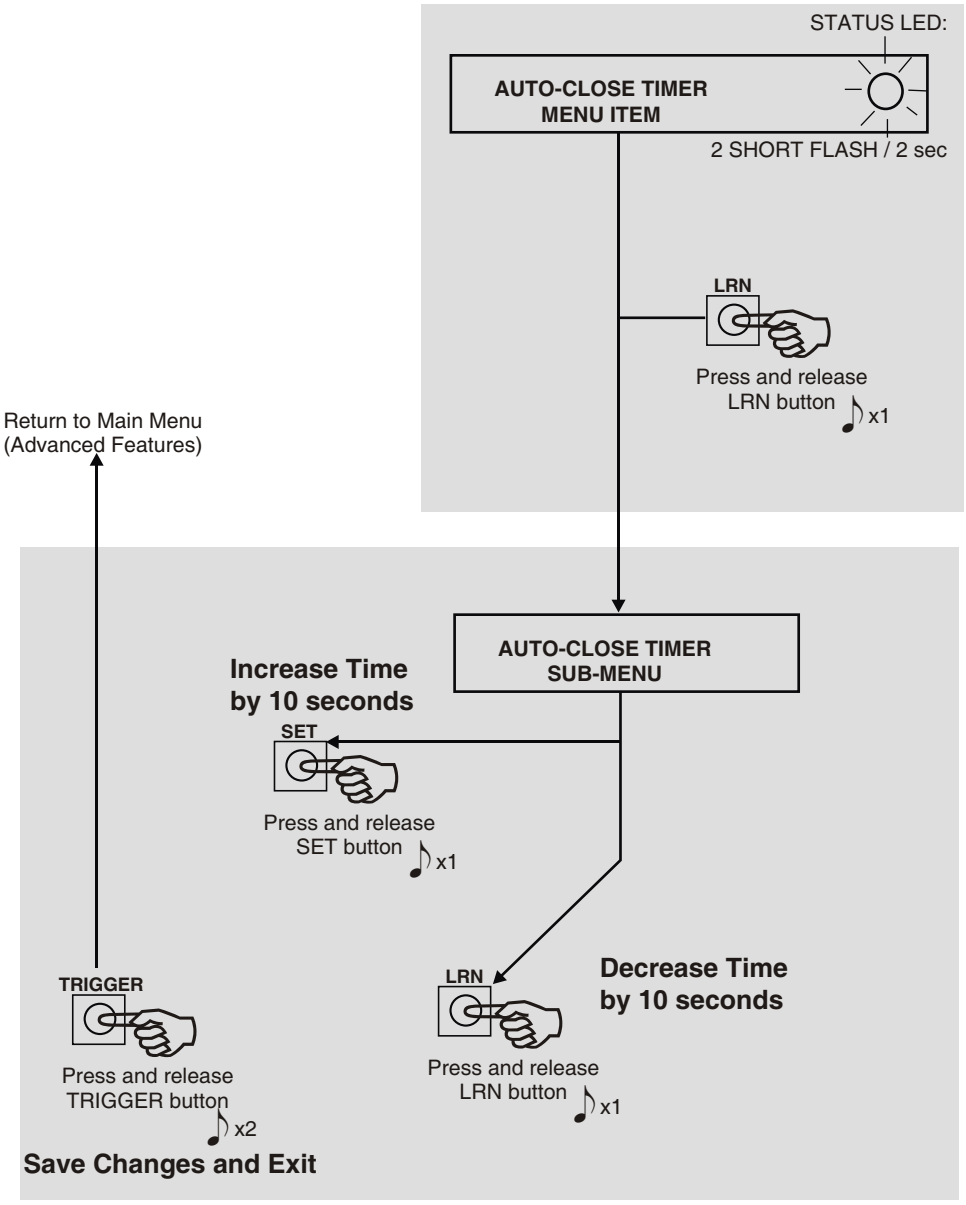
Disabling Auto-close Feature

1. Press SET
2. Press LRN
3. Press LRN
4. Press TRIGGER



Auto-Close Timer Adjustment

When enabled, the auto-close timer can be adjusted for time-out periods between 10 seconds and 250 seconds. Adjustment below or above this range will result in an error indication. The factory default is 30 seconds.



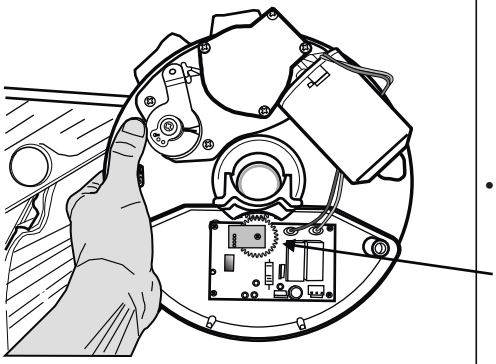
Troubleshooting Guide

The following is a thorough guide to solving problems that occur with the DCC02. It is split into two sections, one for diagnosing troubles during limit programming, the other for diagnosing problems during normal running. These are by no means exhaustive lists of all the possible combinations of problems that occur, but these guides do cover over 90 percent of the problems that our customers experience with this product and how to best resolve them.

Always work through these guides first when solving problems, before calling technical support. This will allow us to provide the best possible support to every single customer. Where a particular problem is not described in these guides, you are encouraged to call us or e-mail us for prompt resolution to your query. We also publish a FAQ on our website, be sure to have a look at that as well for any late-breaking issues that have come to light since publication of this manual.

SECTION A: LIMIT SET-UP TROUBLESHOOTING

Problem	Likely Cause(s)	Possible solution(s)
Cannot set the door up, system constantly beeps four times when power is applied.	• Power Problem • Problem with interconnecting cable • Main fuse (F2) in console blown or fatigued.	• Check fuse F2 • Check the wiring, especially if you lengthened the cable. Check for voltage across the two outer terminals of the interconnecting cable. If none present, replace F2 in the wall console.
The door moves a short distance, then stops with an error beep when attempt is made to program the limits.	• Door not balanced • Spool wheel bent • Dirt/foreign matter on encoder wheel.	• Check the door, if there's a tight spot during upwards travel, you will need to fix it. • A bent spool wheel pulls the driving wheel away from the motor chassis, leading to it coming off the chassis altogether and the encoder no longer rotates. Replace spool wheel or fit an adaptor wheel available from the place where you purchased this product. • Sometimes, dust and dirt from the installation gets onto the encoder wheel, blocking the holes and the system can no longer measure distance traveled. Ensure the area is clean and free of dust/foreign matter.



SECTION A: LIMIT SET-UP TROUBLESHOOTING (cont)

Problem	Likely Cause(s)	Possible solution(s)
The door moves slowly, reaches the endstop and then fails to stop with a loud “clack clack clack” noise.	• Door too light • Endstops not secure enough.	• Add weight to door as shown on page 36. • Make sure the endstops are secure, if not you may need to retrofit additional endstops.

SECTION B: GENERAL OPERATING MODE TROUBLESHOOTING

Problem	Likely Cause(s)	Possible solution(s)
Wall console constantly beeps twice	• No mains present • Mains fuse blown	• Check plug socket, and circuit breaker. • Replace the fuse (1A Time lag glass cartridge). It is an inline fuse fitted on the mains lead.
Wall console constantly beeps four times	• MAIN FUSE (F2) in wall console blown. • Interconnection lead problem.	• Check the fuse (F2) in the wall console and replace if blown or faulty. **If the fuse repeatedly blows, please contact technical support.** • Check the interconnection lead, make sure it is plugged in securely at both ends. The lead can be checked by measuring the outer terminals for voltage (between 23 and 30 volts DC, depending on mains voltage)
Door opens a short distance, then stops. Cannot open door greater than this distance.	• Encoder problem	• Disengage the door, and open and close fully, and ensure that the gear turns all the time when the door is closed and opened fully. If it does not, the spool wheel has likely damaged the drive wheel and pulled it off the chassis. This occurs due to incorrect installation! • Encoder dirty, ensure it is clean and free of debris. Sometimes insects and other objects get into the encoder.

SECTION B: GENERAL OPERATING MODE TROUBLESHOOTING

Problem	Likely Cause(s)	Possible solution(s)
Cannot enter limit programming	• Door not closed fully	• Ensure the door has been closed fully, if not the cause, power cycle the system and then try again.
Door moves short distances when opened and repeated triggers result in further normal operation sometimes after several attempts	• Cold Start issue (pre Jan 2009)	• Units manufactured prior to January 2009 had a software issue, this has been resolved (see website for further details)
Door closes by itself	• Auto-close inadvertently engaged	• Disengage auto-close mode as per page 42
Door moves consistently short distances, will not open further than 10 cm.	• Encoder problem • Bad installation • Door very light	• Check encoder • If installation not carried out as per this manual, that is the likely reason why. • Add weight to the door.
Door doesn't close properly, there is always a gap at the bottom	• Bad insallation • Door not straight • Door very light	• Rectify any installation problems first. • If the door is not straight it is most likely impossible to rectify as it involves removal of the entire door. Add self-adhesive foam rubber to the bottom edge of the door to resolve. • Add weight to the door.
Each new remote learnt into the system, erases the previous one I just learnt in.	• Procedure Incorrect	• Carefully follow the procedure as shown on page 38. Note that this product learns slightly differently compared to other SENTRY products
No auxillary power/ beams and/or external receiver connected does not work.	• Blown AUX FUSE (F1) in wall console.	• Check (and replace) this fuse.
Frequently, the door opens slowly when opened and then runs as normal	• Play on the door	• There is likely free play on the door somewhere. The DCC02 is sensing movement on the encoder wheel when the door is stationary.
The door opens by itself at random times	• Another transmitter, elsewhere was inadvertently learned into the system.	• Perform complete erasure of all stored remotes and learn them in again.

Troubleshooting Guide - Error and Status Codes

NORMAL OPERATION

STATUS LED


OFF = DOOR CLOSED


SLOW FLASH = DOOR OPENING


ON = DOOR FULLY/PARTIALLY OPEN OR PARTIALLY CLOSED


FAST FLASH = DOOR CLOSING

ERROR CONDITION (ONLY INDICATED WHEN DOOR IS STATIONARY)

MAINS FAILURE


2 SHORT FLASHES  x2

BATTERY LOW


3 SHORT FLASHES  x3

COMMS FAILURE


4 SHORT FLASHES  x4

Product Specification

Product Type:	DC drive reduction gear motor for roll up doors
Voltage:	24 volts DC
Power Source:	200 - 250V AC 50/60Hz 120VA
Battery Back-up:	Internal 12V 1.3AH batteries (2 pcs)
Max Lift mass:	Equivalent to 6kg
Receiver Frequency:	433.92MHz
Remote Control Type:	Code-hopping (KEELOQ)
Remote Control Storage:	Up to 16 remote control buttons
Back-up duration:	Max 10 cycles (dependent on battery condition)
Collision Sensitivity:	Automatic with counter (stops after 3 collisions)

Specification subject to change without prior notice

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